

No. 57.

17,948-18,652.

Field Book
of
Willis Linn Jepson

Field Notes p. 260-

1936

If lost finder please
return to me at Room 3000,
Life Sciences Building, University
of California, Berkeley,
and receive reward.

White Thorn Valley, Humboldt Co. 1
Aug. 19, 1936.

I drive from Briceburg to the forks of the Petrovia road and take the Fort Bragg road. I go on to the Shelter Cove forks and take the Thorn road. In White Thorn Valley, almost in front of the Thorn School, a woman motorist meets me in a narrow place and pushes my car off into a ditch. She could not stop and consider how to ease by. In about an hour and a half I am pulled out very easily by a heavy truck loaded with railroad ties. The driver a most pleasant and obliging young fellow with a fine countenance.

-- *Leonothus incanus* . as much as 14 ft. h.!! Thickets very dense and thorny. White Thorn Valley.

2 Needle Rock junction to Kennys,
Aug. 19, 1936.

I am now on the coast wagon trail traveling towards Kennys, at a point 4 miles south of the junction of the road from Needle Rock. This way is still as primitive as when I went over it by wagon in 1902 - a narrow track thru woodland of Madrone, Douglas fir and Redwood. Here *Ceanothus thyrsiflorus* becomes truly arborescent - individuals with distinct trunks & numerous and crowns 14 to 22 ft. h. I collect here the abundant:

No. 17,948. *Arctostaphylos columbiana* ^{var.} *Piper* 7 to 10 ft. h.

- *Cent. frons* 56, p. *Baccharis pilularis* is abundant on the slopes of the bare hills near the beach, just north of Sing-day Creek, and scatters out on the slopes above.

Kennys, Humboldt coast,
~~Madocino~~ Aug. 19, '36.

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Here I am on the wagon trail arched over completely by a dense stand of *Ceanothus thyrsiflorus* 24 ft. h., the trunks of the trees 4 to 9 in. diam. at 8 in. above ground. This point 4½ mi. s. of Needle Rock yet. A little further along I run into a still more remarkable "forest" of it, forming a canopy over the roadway. At another spot it is all *Ceanothus thyrsiflorus* on one side of roadway and *Arctostaphylos columbiana* on other. The latter is common everywhere. Five miles beyond the point noted on p. 2, I find an old settlement on east side of road in a beautiful spot. There is an old apple orchard and remnants of buildings. This is all that is left of Kennys, a

prosperone road station in 1902.
This road is now scarcely traveled.
But it is a most interesting
old route. The road is very narrow,
very crooked up and down with
extremely sharp corners, so that
for 20 miles one is every second
busy pulling on the car's wheel,
with all one's strength and quick-
ness summoned for the task.

I drop a long long zig-zag
way to Usal - no longer a town, even
the store closed up. Over the hill I
climb again and come down to the
main coast road just north of
Rockport.

- *Erechtites pernanthoides* Kennys.
Also Usal.

- No. 17, 949. *Bellis perennis* L. Rockport.
No. 17, 950. *Digitalis purpurea* L. 5-7 ft. H. Rockport.
No. 17, 951. *Rubus ~~laevigatus~~ ^{occidentalis}* Blanch. Rockport.
all last three on windy flat.

Aug. 19, 1936.

This road, from Needle Rock to Usal
is truly a ^(p. 2-4) wonderful road - on account
of its woodlands. There was no time
for me to stop and make a de-
tailed study at any point. The road
is a mere trail wide enough most
of the way for only one car. Some-
times for lovely stretches in the
forest it is smooth in the way of
the old-fashioned wagon road. Other
places it is very rough with stumps
and rocks just allowing bare room
to get through. One may in places
make 2 or 3 miles per hour and
work hard to do it.

- *Spring Whin* ?

between Usal and Rockport, in the
Redwoods near a ranch.

- *Gentiana solstitialis* ~~the common~~
De Haven.

I come out to the ocean bluffs at Hardy Creek and collect:

✓ No. 17,952. ^(Discarded, insect damaged) *Erigeron glaucus* Ker.

Strictly erect; several-stemmed from base.

✓ No. 17,953. *Eriogonum latifolium* Sm. Stems ascending or erect from a loose disk of basal leaves; that is the stems from this leafy base are spreading, ascending or erect.

De Haven, Mendocino coast, Aug. 19

✓ No. 17,954. *Leontodon leysleri*

Common on [↑]tops of the sea bluffs. [↑]meadow-like

✓ No. 17,955. *Graphalium*

Very very erect from a very short decumbent base where there is more than one stem from base. In other words the central axis is always erect.

No. 17,956. *Navaretia squarrosa*
H. & A. $\frac{1}{2}$ of spm. taken

✓ No. 17,957. *Chupanthemum* ^{lydly insect-damaged} ~~discarded~~ ^{2/3 of this, composite, individual, a} taken 9/55. ^{PCB.} Abundant along fence-lines.

The wonders of the Mendocino coast line: everywhere are more remarkable cypress hedges than one sees elsewhere (*Cupressus macrocarpa*), sometimes of amazing height, making clipped walls that are imposing.

The Inglenook Redwoods* still make picturesque colonies of engaging interest. And everywhere are the groves of *Pinus muricata* on plain and headland.

* wind-blown, standing on the sand-dune-beach formation.

no. 17,958. *Pinus muricata* Don.

South of Russian gulch at Jack
Peter's Creek.

no. 17,959. (~~discarded~~) *Rosa nutkana* Presl.

South of Russian gulch near Mendocino
City. at Jack Peter's Creek

no. 17,960. *Angelica hendersonii* C. +

R. Brewery Gulch near Little River.

- *Cirsium edule*. Dimmick Park,
Navarro River. It is now far past
flowering and its heads are mostly
empty.

- *Emmenanthe setigera* Navarro.

- *Quercus garryana* Philo.

- Very beautiful and varied park-
like ^{high} slopes to the hills north
of Philo.

- *Quercus agrifolia* Née. Very
dense round-headed trees fruit-
ing heavily this year. Anderson
Valley. See no. 17,960.

- *Emmenanthe setigera* Bth. Impart-
ing a silvery-gray aspect to the

August 20, 1936.

gentle hill slopes in Anderson Valley.

Not forming a continuous cover
any more than in the Great Val-
ley - but as much at home.

no. 17,961. *Quercus wislizenii* A. DC.

Anderson Valley. See p. 8. This
station is markedly near the coast for this
species. In a sense, it is *Q. agrifolia* territory.

- I stop to collect; between Anderson
Valley and Yorkville: (Mendocino
Co.)

no. 17,962. *Heurizonia luteaefolia* Dc.

Rays yellow. Forming dense
small colonies on dry hillsides
but making no show; only a few
inflores at one time on a plant -
often only one head. Ombaum Creek.

no. 17,963. *Quercus garryana*
Ombaum Creek
lobata Née

Ombaum Creek.
- This spot, is a welcome "back home"
I am never truly restful in the coast line
fog belt; but here the California
woodpecker trolls his happy see-saw in
the oaks, a soothing sound in the
dry warm air and brilliant sunshine.

- *Eriogonum nudum* Bth. Between the Russian River and the coast I have noticed only two colonies - both on broken banks or loose banks.

- *Verbascum thapsus* L. Betw. Yorkville and Dry Creek (s. Mendocino Co.).

No. 17,964. *Eriogonum nudum* Bth.
* * Betw. Macdonald road sta. and under St. ^{var. nudum}

- I turn off the highway into a country lane at Windsor and lunch under a *Quercus douglasii* tree - a remnant of "Poor Man's Flat".

From this spot in the valley I can see Geysers Peak, Mt. St. Helena and Hood's Peak. With the latter I am much impressed by its bulk, its broad summit, its height.

* I now find another one, easterly 2 mi. from Macdonald road sta. Also on broken bank.

* * nw. of Cloverdale,

Aug. 20, 1936.

At Richmond Ferry as I wait in line for the boat to come in I see across the waters above Twin Sisters* Islands the form of Mt. George in the Napa Range, also Twin Sisters ^{Peaks} and, faintly, Elkhorn Peak just north of Jameson Pass. The Napa Range lies far on the horizon in a deep haze, but under a clear sky, the intervening area cloudy with an unbroken fog canopy. It has always given me pleasure to study mountains lying far away and to pick out landmarks in ranges once covered by my foot. It is quite a game.

* Properly "The Sisters", simply.

— There came in to call this morning a lady who teaches in the Crescent City High School. She says she made a list of 1500 Del Norte County plants. She writes her name for me as follows:

Mrs. Ruby Van Deventer
Del Norte Co. H. S.
Crescent City,
Calif.

Her husband is A. S. Van Deventer. 2232 Blake St., Berkeley. They have brought their daughter, aetat 16, who is entering the University. The husband is to stay here with the daughter, the wife returns to her post in the Del Norte High School. Mrs. Van Deventer says that she has collected *Monotropa uniflora* several times at a given locality in Del Norte County.

— Came to call this morning early, Dr. J. B. Norton, Department of Botany, University of Maryland. He is interested in a somewhat novel project, the preparation of a paper to list and annotate the most common plants of the earth. For that reason he noted the common plants of California when he entered it from the north

— noting a low gray spreading plant abundant everywhere on the dry hills. What was this plant? I told him it was *Eriogonum setigerum* and so with many other species he noted I told him the names. He traveled across the continent, he and his wife, skirting the northern boundary, all the way by Greyhound bus. From here

They go to Los Angeles, and thence home, still by bus. He says that Maryland, after Albert T. Woods left, put the President of Iowa State in as President (Peterson, I think he said). He was not liked and so they put in a football player as President. His name is Byrd - a relative of Senator Byrd of Virginia. Norton tells me Maryland is a great fur-producing state - it has a hundred square miles of salt marsh which would be entirely valueless save for its muskrat population. Norton lives at Hyattsville, Md., within a few yards of the home of U. K. Ghesnut.

Norton has a keen interest in cultivated plants. I took him

to luncheon at the Faculty Club. On the way he constantly asked the names of many exotic shrubs. Some of them I could not at once recall the name. I remarked: When first on this campus 46 years ago as an assistant in botany I learned the names of the strange exotic shrubs from the antipodes which were grown on the campus. Almost none of those species are here now. The shrub population constantly changes and it would take all one's time just to learn the names. Said Norton: "That is similar to my experience with Dahlias. Ten years ago I made a study of garden Dahlia varieties which was printed. All those varieties have now passed out. I do

not know what good my study is now.

— Journal to me

— Called today Dr. Fr. Verdoorn, Leiden, Holland. He is traveling about the United States, somewhat in the interests of Chronica Botanica, of which he is editor. I imagine. No indication of my activities appears in the current number which he wished to talk about. He said that next year a blank would be sent direct to me.

He remarked my Flora of California, on coming in, said that he had heard that I had a new system of reading

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printer proofs, by which I assigned each proof read^{successively} to some one duty. He brought greetings from Professor Geo. H. Jones, University of Washington. I took him to luncheon and he seemed to enjoy the Faculty Club. — Sept. 7, 1936.

— Cont. from bottom p. 183. The herbarium of the State College was shown me quite thoroughly by Dr. Lincoln Constance. It has very large riches, much historical material. The founding of it was, I suppose, by C. V. Piper. The Saksdorf Herbarium was obtained for the college by St. John (Harold). When St. John left, he took his herbarium with him, altho he left some duplicates. In other words he had a private herbarium. I notice now (cf. 28:110) that Prof. C. V. Piper's herbarium was purchased by the state college!!

Berkeley, Oct. 8, 1936.

H. H. Hewitt,
866 Jefferson Court,
San Mateo.

This man "got through the lines" by a ruse and proceeded to talk me to death: namely, "the U. S. Forest Service is utterly wrong in its forest policy; so is the California State Bureau of Forestry. Our forests are being burnt up because of transpiration" and he can take any one out and prove it!! The man is unbalanced and ignorant, but an intense crusader!

- Came to call Mrs. Edith Murphy of Bozelo who has been collecting in the Texas incognitae north of Round Valley and far into Trinity Co. She says the colonies of *Pinus*

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tuberculata are regarded by the Round Valley Indians as storage for famine years and are never used in ordinary years. They use *Pinus sabiniana* regularly but not *Pinus tuberculata* until a famine comes. - Oct. 26, 1936.

Mrs. Murphy (see above) says that South Fork Mountain is owned in large part by Miss Helen Anderson, an aunt of Helen Wills.

- *Arctostaphylos nummularia* Gray. $1\frac{1}{2}$ to 4 ft. h. at old trestle, Muir Ridge. Trunks 6 in. from ground = $\frac{3}{4}$ to $1\frac{1}{2}$ inches ^{diam.} mostly, sometimes 3 inches ^{diam.} At ground, if there is branching at ground, the diameter may be 5 inches at ground.

no. 17,965 *Arctostaphylos nummularifolia*
var. *sensitiva* (Gray) McMillan
Gray See note above.

No. 17,966. *Arctostaphylos glandulosa* Eastw. near Bootjack Camp.

Basal platform consisting of several united bulbous structures in a row, 2 ft. 10 in. long by 1 ft. 2 in. wide.

4 live trunks, 2 dead ones. They rise abruptly from the bulbous bases which are curly-sloppyarked; they are 2 to 3 in. diam. at 1 inch above bulbous base. Height of shrub 8 ft. Another shrub along

8 ft. Another shrub along
side: subcircular base 2 ft. 6 in.

across; seven live, four dead stems (or
trunks), $1\frac{1}{2}$ to $4\frac{1}{2}$ in. diam. 2 inq
above bulbous base. Shrub 8 ft. h.
No. 17, 967. ^(dup. for #17,966) *Arctostaphylos glandulosa*

No. 17, 968. *Calycadenia multi-*
glandulosa ^{DC} Abundant Near Boatjack Camp

No. 17,969. *Arctostaphylos* ^{*purpurea*} ~~*montana*~~
montana Eastw. Shrub of the type in
form of *A. purpurea*. Distinct
bush 1 foot high ($4\frac{1}{2}$ in. diam.
at 6 in.) before parting into
erect or ascending branches,
making a compact crown; 8 ft. h.
Ridge nr. of Mountain Theatre.

No. 17,970. (^{det. for 17,969}) *Arctostaphylos* ^{Pungent} _{mon}
 tana Eastw. Within 50 yds of
 preceding. 14 in. h., 5½ broods!
 many stemmed. It is difficult
 to say, it is a stump-sprout,
 but its appearance, i.e. habit
 is that of a stump-sprout.*

— I now find a bush, at
 foot of West Peak on trail,
 which spreads horizontally
 trailing on the ground and
 covering a circle 9 ft. across. The
 stems root. The ascending ^{prostrate} _{tray.}
 ones are 8 to 12 inches high.
 A broad rough mat! This I
 record as:

No. 17,971. *Arctostaphylos*
 montana Eastw. See above.

No. 17,972. *Quercus chrysolepis*
 Liebm. Thick bush 10 feet high.
 West Peak. Leaves all small!
 * See p. 26.

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No. 17,973. *Bupresans sargentii* Jepson.
 Foot (west) of West Peak, on trail, in
 north side swale. Mostly 8 to 10 feet
 high, one tree 20 ft. h., on with
 trunk diam. of 14 in. at one foot.
 — *Bupresans sargentii* Jepson.
 On trail west of preceding 300
 yds.

No. 1 — 28 ft. h., circ 4 ft 6 in. at 2 ft.

No. 2. — 18 ft. h., circ 2 ft. 11 in. at 2 ft.

No. 3 — 24 ft. h., circ 2 ft. 10 in. at 2 ft.

No. 1. is the easterly large tree in
 the group.

No. 2. is the most westerly

No. 3 is westerly, standing
 close by a tree whose trunk
 is divided near the ground
 and was not measured
 though very large.

This group on south side of trail. Many
 other groups along trail on both sides
 in short distance (going west.). Some

colonies of small trees (saplings) that originally stood as thickly as cornstake.

No. 17, 974. *Arctostaphylos glandulosa* Eastw. This is ^{the} characteristic bush along the ridge trail between West Peak and Rock Spr. Notice how glandular are the stems - the hairs gland-tipped; ^(many of) also the hairs on the young leaves are gland-tipped. Notice the glabrate! old leaves.

- After climbing much of the day over rock trails it is a delight to come into the portion of the ridge trail towards Rock Spring (between the high point west of West Peak and the Mountain Theatre) and feel the soft velvet of Madroño leaves under foot! What a fine stand of *Arbutus menziesii* on north side of trail - pale berries. It is

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also highly interesting along this trail to look so clearly at the bulbous bases of *Arctostaphylos glandulosa* - many of them, in cases of small clusters, as regular and symmetrical as if turned!

In some cases the root-crowns have died but leaving a patch of live tissue on one side. Also, this a great area for demonstrating form. Here is a Live Oak (*Quercus agrifolia*) 6 ft. h., the short columnar top spreading out $1\frac{1}{2}$ feet below top into a broad "hoop skirt" that rests on the ground and is 11 feet in diam. at ground! The thick close cover of *Quercus wislizenii frutescens* is amazing on some individuals; ^{as} also *Beaumontia*. I notice an individual of *Beaumontia rigida* whose trunk is

fracturing longitudinally after the fashion of *B. curvatus*.

- Cont. from p. 22, at *. I dig at it a bit. Its horizontal stems strike root probably but there is no evidence that the stems come from an old root crown.

No. 17, 975. *Eriogonum caninum*
(*greggii*) ^{numm.}
Near Goatjack Camp.

No. 17, 976. *Heurizonia lyulacifolia* D.
Near San Quentin.

Climinate and Rainfall

The fall has been marked by calm dry weather - only one brief rain-storm since July 1. The quality of the weeks has been "Indian Summer", clear mild sunny days without air-movements. Here lately, by for some weeks we have had fog - much fog - lately, often very dense and not going out to sea all day. On one of the days when it was very dense, Saturday, Nov. 28, 1936, one of the men in the club said that it had been blowing a high gale all that day in the Lower Sacramento Valley, from the north west. The air current poured in from the ocean through the Bodega Gap. At Berkeley it was dead calm!!

- Came to call at this moment one Hastings, a young fellow, National Park Service. He said: "I have been commissioned to make a map of Cactus and I cannot find any book that shows distribution." So I questioned him it appeared that he meant "Cactus" and not *Cactaceae* which seemed probable at first. I then explained that the problem could be simplified by understanding that there were no *Cactaceae* of any kind in the Eastern Hemisphere, only in the Western Hemisphere. He had no notion of this and said so. By repeating Cactus and Cacti many times in the proper way I tried to impress upon him the singular and the plural signification of these words. Next I explained to

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him that if he would look ⁱⁿ the work on Cactaceae by Britton and Rose, he would find in it the genus Cactus with each species described and its geographic range. So I wrote out the references for him and sent him to the library for the set. It is likely he is utterly untrained and quite ignorant like most. - Nov. 17, 1936

- Drove to St. Helena Sanitarium this Monday afternoon ^(Nov. 30) reaching there at 5:00 o'clock. Next morning I walked up the road toward Howell Mt., taking the short cut up the gully that heads towards Four Corners. On this trail I measure individuals of Arctostaphylos manzanita

Howell Mt. (betw. Sanitarium and Four Corners), Dec. 2, 1936.

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as follows:

- No. 1. Trunk 30 in. circ. at 18 in. above ground; 12 ft. high.
- No. 2. Trunk 4 ft. 5 in. circ. at 4 in. above ground. This is the smallest part of trunk which branches at 18 in. from ground. At 4 inches I make the diam. = 20 in. At 18 in. above ground I make the diam. = 26 in. This is the largest diam. at that height. Height of individual = 14 ft.
- No. 3. Trunk 6 ft. 6 in. before branching save one small branch at 3 ft.; very uniform in diam. from top. to bottom = 14 in. Individual 19 ft. 6 in. Climbed out of gully on to road and went down to the "hair-pin". Near head of "pin" on upper

side is a tree (lower side of road) 18 ft. h. The trunk is 3 ft. 9 in. circ. at 3 ft. 6 in. above ground above which it is 2-forked into an erect crown. The trunk is about the same diam. at ground as at 3 ft. 6 in.

Invasion of cleared slopes.

1. There is a clearing near foot of trail up gulch to Four Corners. The pioneers in repopulation are:

Lotus scoparius.

Arctostaphylos manzanita, a good deal

Arctostaphylos stanfordiana, one individual.

Baccharis pilularis, a little on margins.

Eriodictyon californicum, the most abundant species.

2. In a non-cultivated vineyard, at open end of "hair-pin", the following shrubs are taking possession:

Arctostaphylos manzanita, mainly.

Photinia arbutifolia, about as much as preceding.

Arctostaphylos stanfordiana, a little.

Baccharis pilularis, a good deal.

It is remarkable that *Baccharis pilularis*, a marked pioneer on open virgin slopes and flats in the hills, should not at once overrun old clearings in advance of other species. It seems to be secondary to several other shrubs.

Low slopes below Adam-and-Eve, Dec. 3, 1936.

Arctostaphylos manzanita.

no. 1. Individual near cottages on little ridge back of Sanitarium: 19 ft. h., diameter 2 ft. 4 in. at ground, the largest diameter, the trunk parting just above ground into six main stems.

no. 2. Near cave: trunk 1 ft. 4 in.

diam. at 6 inches above ground.
Trunk branches at 8 in. into 5
arms. This individual chopped
down for wood.

No. 3. Near Carr: trunk 6 ft. $\frac{1}{4}$
inch circ. at 6 inches above
ground; branching at 1 foot;
14 $\frac{1}{2}$ feet high. This individ-
ual is dead, but still per-
fect, not rotted or storm
injured. The branches or
main stems from the base are
many; the crown is very
broad and baobab-like.

No. 17,977. *Arctostaphylos* ^{stanfordiana} ~~man-~~
~~zanita~~ Parry. Near Four Corners,
Howell Mt. Dec. 2, 1936

No. 17,978. *Arctostaphylos stan-*
fordiana Parry. With preceding.

I stop at a point c. 3 miles
westerly from Middletown, where there
was forest fire about five years
ago - perhaps 4. The stand is open:
Quercus douglasii, *Pinus sabin-*
ana, an occasional *Pinus ponderosa*,
Arctostaphylos manzanita.

The new stand is *Arctostaphy-*
los manzanita in abundance,
the seedlings so dense in spots
that the foot ^{stumbles over or} crushes one. Seed-
lings 3 to 15 in. high. Reproduction
of *Quercus douglasii* and *Pinus*
sabiniana is scanty. I notice
only one seedling of the latter at
this spot.

No. 17,979. *Arctostaphylos man-*
zanita Parry. Seedlings. Near Big
Oak road sta., w. of Middletown.

No. 17,980. *Eriogonum molestum* var.
dauidsonii
Plants in colonies, often on
broken ground, forming dark amber
patches. By roadside.

- On the east base of Mt. St. Helena, as soon as we get down to the foothills, the Blue Oak (*Quercus douglasii*) and *Pinus sabiniana* come in. Associated with these two species I always find *Arctostaphylos manzanita*. Of the three it is the dominant in number of individuals. With these three one sees an occasional Western Yellow Pine (*Pinus ponderosa*). All the way into Middletown from Big Oak road station, traveling easterly, one sees the Parry *manzanita*. Beyond Middletown, for a distance of fifteen miles we have the low rounded foothills fringed with Blue Oak and Sugar Pine, and with ^{also} the abundant *Arctostaphylos manzanita*. Sometimes there is a *Pinus ponderosa* tree, more

often not. Near Excelsior Valley, just south of Lower Lake, I take spms. of the *manzanita* (see no. 17,990).

Excelsior Valley has a flood-plain floor with *Quercus lobata* over it and three or four ranch houses. About a half-mile beyond it, toward Lower Lake, just around the corner of a little row of hills, I stopped at a small ranch house and asked the man the name of the valley. He could not tell, saying he had forgotten. He was, say 65 or 70, and remarkably profane in a good-humored way. When I arrived in Lower Lake I asked the gas station man: He said, Excelsior Valley; that the man was named Charley Dow. Dow described himself to me as a disciple of "Abraham Lincoln". Other words

species were extremely few in this low-foot-hill country: *Cercis occidentalis*, scattered individuals frequent; *Quercus wislizenii*, individuals extremely few!!

I turn westerly from Lower Lake towards Kelseyville. In a mile or two one is in different country - a higher terrain, channeled hills, some *Cercocarpus parvifolius*, a good deal of *Pinus ponderosa* (some trees 90 ft. h.) and two species of *Arctostaphylos*:

No. 17, 981. *Arctostaphylos elegans* Jepson* 6 ft. h., erect; bark dark red-brown; panicles drooping, much branched. No enlargement of trunk at ground. In the field I call this *A. elegans*. Its panicles are very different from the panicles of no. 17, 990. The point where
* Cont. p. 38.

of), Dec. 5, 1936.

I collect this is about 2 mi. westerly from the village of Lower Lake.

At the same place I collect from a shrub standing alongside no. 17, 981: No. 17, 982. *Arctostaphylos canescens* Eastw. 5 ft. h., trunk not bulbous at base; bark black as seen from a little distance, dark reddish brown close at hand; panicle consisting of few (2 or 3) short branches; branches very bracteose, the bracts large, conspicuous; panicle erect.* Cont. p. 38.

At this station also: *Beaumontia integrifolia*, the small-leaved form; it is associated with *Pinus ponderosa*; *Quercus dumosa*; *Rhamnus californica*; *Rhus diversiloba*; *Cercocarpus parvifolius*. Also the next.

No. 17, 983. *Cercis occidentalis* Torr.

* The shrub is wonderfully white!! in a way not shown by the dried spm.

- *Arctostaphylos elegans* Jepson
note that the leaves to a great
degree tend to be elliptic or nearly
orbicular! Cont. from 17, 981.

- *Arctostaphylos congesta* Eastw.
Notice that many of the leaves
are orbicular! Cont. from 17, 982.

- I travel on westerly and stop
at the first summit west from
Lower Lake. This is not far from
the point where the branch road
goes off the left (south side of
road) for Adams Springs. Here I
collect:

✓ No. 17, 984. *Quercus dumosa* Nutt.
Shrubs 4 to 7 ft. h.

✓ No. 17, 985. *Quercus wislizenii* A.D.C.
Shrubs 6 to 9 ft. h.

✓ No. 17, 986. *Pentstemon*
Dry flat; stems several from the
base; erect.

I drive on westerly and stop at
a point within 1 or 2 miles of
Shaws Flat.

✓ No. 17, 987. *Antirrhinum virga*
Gray. Stems several from the
base in a close erect clump, 4
to 6½ ft. h. Dry flat.

✓ No. 17, 988. *Arctostaphylos elegans**
Jepson. Near Shaws Flat.

- Shaws Flat is the name given me
by the young fellow ^{named Carr} I picked up
on the road and gave a ride to
Lower Lake. It is the first quite
large flat easterly from Barry
Ranch (Barley Flat) ^{which is} also called
Manning Flat. Shaws Flat once
had a race course on it acc-
ording to my informant.

* 6-12 ft. h.; branches at ground
very erect. Rachis microscopically
pubescent; branches of panicle
divaricate.

I drive on westerly and stop at a point on the road where the lower slopes of Mt. Konocti come nearest the road. At this point, the type locality for *Arctostaphylos elegans* Jepson, I collect: no. 17,989. *Arctostaphylos elegans* Jepson. Colony of bushes, on north side of road 5 to 8 ft. h., in a little flat. Some of the bushes still have a few berries. On the ground are shells of the pericarp which show that the berries are roughly dehiscent and release the nutlets. I obtain a few berries which have the berries thickly sprinkled with short sharp points or glandular processes. There has been a fire at this point and one shrub has been fire-killed. There is no sign of crown-sp-

routing! Nor do the other individuals in the colony show any swellings or platforms at base of trunks. From ^(see p. 40) this point where ^{apparently} the road starts down hill to Kelseyville, I turn back to Lower Lake. From here to Lower Lake there are only a small number of colonies of *A. elegans*, mostly a small number of individuals. It appears to be a rarity. In this high country I did not see *Arc. manzanita*. I return to Lower Lake.

From Lower Lake I drive back to Middleton. At a point about a mile beyond Excelsior Valley, driving southerly, I collect as representative of the great colony or formation of *Arc. manzanita* that stretches from Lower Lake to the foothills of Mt. St. Helena

the following specimen:

No. 17, 990. *Arctostaphylos manzanita* Parry. Excelsior Valley, Lake Co. See p. 35 ante.

— From Middleton I drive westerly up St. Helena Creek and within 2 miles of the old Toll House I collect:

No. 17, 991. *Arctostaphylos viscida* Parry. A large spreading bush 12 ft. h. It was so white when I saw it at a distance that I thought it another individual of *A. conserens*.

No. 17, 992. *Arctostaphylos stanfordiana* Parry. Four Corners, Howell Mt., Napa Range, Dec. 7, 1936

No. 17, 993. *Arctostaphylos manzanita* Parry. Glass Mt., near St. Helena; open flat ss.

side of the mountain. 12-7-36.
No. 17, 994. *Arctostaphylos glandulosa* Eastw. Howell Mt., Four Corners. 12-7-36

— There has just come a letter* from Mrs. Ernest A. Bryant. Of vol. 2, *Flora of California*, she says: "I am enjoying the book** immensely."

I roared with delight! Mrs. B. doesn't know anything about systematic Botany at all. However, it is very friendly for her to express herself in that way.

* dated Dec. 8, 1936.

— St. Helena Sanitarium. Jan. 31 - Feb. 8, 1937. I collected nothing.

— Mr. Ewan says: "H. F. Cofeland is now in the herbarium with a student he has brought down from Sacramento Junior College. Looking over *Pyrola* he said: I don't know very much about these but I have slapped some names on the sheets." —
Dec. 23, 1936.

** A complimentary copy sent by me to the Rancho Santa Ana Botanic Garden.

— Weather. — The winter has been very stormy. The rains broke about Christmas Day after a very long dry period reaching back to Apr. 15 about. It was a fall notable for its comfort and sunshine. Since then the winter has been for most persons notable for its discomfort — continued cold with low killing temperatures and much rain. Eucalyptus and many other exotics have been more injured than in Dec., 1932. In the south, rain has been above normal: at San Diego, Los Angeles, San Luis Obispo and Fresno; while Eureka has lagged at less than half of normal most of the time; Redding likewise; and as to Sacramento, Stockton and San Francisco, they have

March 11, 1937.

been below normal, often far below, until recently when they have moved near normal. It is a case of curious reversal as between the north and south. Flowering of native vegetation has been much delayed. *Ribes sanguineum* var. *glutinosum* which flowers in early December in some years, did not push its racemes into anthesis until lately. All grass has been and still is much behind and stockmen suffer badly. When my almond trees at 11 Masswood Road came Mar. 10, they were a month behind in flowering, and being so late the leaves came with them which spoiled the pure beauty of the blossoms. See p. 47 seq. — Mar. 11, 1937. Also a heavy rain Mar. 12.

- Came in this afternoon Mrs. Ruby Van Derwater of Crescent City, California. ^{See p. 12 ante.} Sluggish and irritable, she said: "I'm sold on botany. I've become a perfect crank on the native flowers. I'm a nuisance to my husband and child. My! I can find every interest in botany. It's now my life! But I don't know any botany. I didn't get any in college."

Yes I had lectures with Pop. Satchell and he turned me so much against botany that I wonder now I could ever have learned to love flowers as I do now. The bible we keep on the mantel-shelf but Jepson's Manual is kept on the dining room table right by my plate!" Her husband, Mr. A. F. Van Derwater

is an artist. He came in to the laboratory and joined us before we finished going over Mrs. D's note book. - Mar. 24, '36

- Weather. See p. 44 ante. A very heavy rain on March 19. Since then it has rained an inch on one day, perhaps on more than one day. Heavy storms with an interval of a day or two of sunshine have come along in succession. About 4 days ago it seemed to rain heavier than I have known it in a long time. Strawberry Creek booming!! The Vacaville Reporter speaks of $4\frac{1}{2}$ inches rain at Eureka within one week. - March 29, 1937.

- This noon General David P. Barrows came to my luncheon table at the Club. We talked of the prospects of fine flowering in

the desert this year and of the great Sugar Pine tree in the meadow at Orrington, about $\frac{1}{2}$ mile westerly from the old Gardner ranch house. Barrows says it is spoken of as the largest tree in California of this species, *Pinus lambertiana*. Barrows also spoke of his acquaintance with Don _____, at Nipomo Creek, who lived to a great age, dying at ninety a year ago. Fremont on his campaign southwards in 1846 camped amongst the great sycamores which have since been cut down. The don, then a lad of 4 or 5 went to Fremont's camp to see Los Gringos Americanos and their leader, Captain Fremont. The incident was one of his memories. The don

butter was a landholder and slaughtered four or five bears for the expeditionary force.

Barrows also said: From a very early day the Spanish fleet left Acapulco on its yearly journey to the Philippines. On the return journey they went north to about the latitude of Tokyo, caught the trade winds across the Pacific for the American coast. Cape Mendocino was their regular landfall. Thence they ran down the coast to the home port. For two hundred years they kept up this routine, never departing from it, never discovering the Hawaiian Islands or any other lands, and paying no attention to California, the most priceless gem in all their dominions!!

— Came to the St. Helena Sanitarium for a few days rest on Tuesday afternoon, April 6. Today went down to St. Helena to have the brakes on my car re-set. At the St. Helena Garage, Wheeler Garage, the man who did the work proved to be an old-timer, who in the old days had shod horses at the blacksmith shop in the town. Said I: "Since you are an old-timer, perhaps you knew my brother-in-law, Frank Pellet. He replied: "Oh, yes, I knew him well. We have never had in the town any banker such as he was". My brother-in-law was in charge of the Bank of St. Helena. The ^{man's} name was Schneider, and

He worked for the old-time blacksmith Benzie.

— Climbed from the Sanitarium to Adam-and-Eve ridges. I collected the following on April 10, 1937:

"No. 17, 995. *Rhamnus californica* Esch. In the chaparral on the ridge summit; leaves small and thick; 4 ft. high.

"No. 17, 996. *Arctostaphylos glandulosa* Eastw. Rounded bush 4 ft. high, 6 ft. broad; many small stems from a woody base, the stems mostly $\frac{1}{2}$ in. diam.

"No. 17, 997. *Arctostaphylos stanfordiana* Parry. Flowering is late on account of the cold season. With next.

"No. 17, 998. *Umbellularia californica* Nutt. On the cross-rift or rock traverse going up, $\frac{1}{4}$ mile below summit.

- ✓ No. 17,999. *Cercocarpus* ^{parvifol}
~~is~~ *betuloides* Nutt. ex T. & G.
✓ No. 18,000. *Athyrium purillae*
Greene.
✓ No. 18,001. *Arbutus menziesii*
Pursh.

- Walked today, April 14, 1937,
toward Bell Cañon ^{Howell Mtn.} over an old
wagon trail in the woods.

- ✓ No. 18,002. *Ceanothus cuneatus* (Hook.)
Nutt. 4 ft. h., strag-

gly shrub.

- ✓ No. 18,003. *Lupinus nanus* Dougl.
1 leaf hairy only on

upper half. Rocky slope.

- ✓ No. 18,004. *Quercus agrifolia* Nutt.

- Cont. p. 62 seq.

Berkeley, April 16, 1937.

Today some one told me half the
crown of the Willey Oak had fallen.
This was at the breakfast

table and the man who spoke may
have been from Agriculture. At
once I went over to see the tree.

A crew of men were already sawing
up the great branches. It was a
sad spectacle lying along the
bank of Blackberry Creek. The
tree in symmetry of crown was the
finest, I think, of those left on the
grounds.

Solano Co.

- Drove to Vaca Valley, Apr. 18, 1937.

At Tolosa rr. station collected in
the wild strip along railroad:

- ✓ No. 18,005. *Veronica peregrina* L. var.
^{zalapensis} St John & Warren.

- ✓ No. 18,006. *Poa scabrella* (Thurb.) Benth. ex
Vasey (det. B. Crompton, 7/77) Grass. Very common,

dominating the railway strip.

- ✓ No. 18,007. *Pleurapogon californicus* (Nees)
(det. B. Crompton, 7/77) Grass. Benth. ex Vasey

Hard soil 2 mi
sw. of Vanden.

(see p. 61). on Farmington road, Apr. 23,

No. 18,008. *Mimulus tricolor* Hartw. 1937
Low flat.

No. 18,009. *Psilocarphus brevissimus* Nutt.

This muloid grows in a low flat.

No. 18,010. *Poa annua* L.
(det. B. Crampton, 7/77)
Grass in low flat.

No. 18,011.

Composite.

No. 18,012.

Composite.

No. 18,013. *Poa annua* L.
(det. B. Crampton, 7/77)
Grass.

No. 18,014. *Veronica pergrina* L. var.
salapensis S. J. & W.
Low flat.

No. 18,015. *Achyrachaelna mollis*

No. 18,015a. Muloid.

No. 18,016. *Lepidium nitidum* Nutt.

Remarkable for the purple fruits which make a show in the grass like flowering racemes. Only the upper side is colored.

No. 18,017. *Ausimikia intermedia* F. & M.

No. 18,018. *Soliva sessilis* R. + P.

Dry packed hillside ground.

No. 18,019. *Scribneria bolanderi* (Thurb.)
(det. B. Crampton, 7/77) ^{Maack.}
In dry hillside soil; the lvs. like

slender quills or somewhat jun-
coid structures; they do not suggest
flowering spikes scarcely or as being
in flower until you really notice
them. That is to say they suggest
grass shoots in early stage and
therefore ^{tend to be} disregarded by the eye.

No. 18,020. *Orthocarpus attenuatus* Gray.
Dry hillside.

No. 18,021. *Matricaria matricarioides* (Less.)
Porter
Dry beaten soil.

No. 18,022. *Flaerkea*
Flat (flower-bedeked like
Paradise) opposite hill where ^(the fields of) stop.

No. 18,023. *Layia fremontii* (Gray) Gray
Rays sulphur-yellow, white-tipped
Flat

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Eugene, Stanislaus Co., 2 1/4 mi. westerly, dry hillside.

Apr. 24, 1937. 160 ft. *Allocarya acanthocarpa* Piper.No. 18,024. *Allocarya acanthocarpa* Piper.No. 18,025. *Allocarya austinae* Greene.No. 18,026. *Micropus californicus* F. & M.

Inuloid on dry hillside.

No. 18,027. *Leptolaena humilis*

This is frequent on the dry hillside. Between Eugene and Knights Ferry it is common at one place where we stopped.

No. 18,028. *Ranunculus*

Fls. large; fruiting heads large.

Woodward Reservoir*, sw. side, 6 mi. sw. of Eugene, Stanislaus Co., Apr. 24, 1937.

* = headwaters Simmons Creek.

No. 18,029. *Cerastium viscosum* L.No. 18,030. *Stellaria nitens* Nutt.

This slender caryophyll is a rarity or at least so inconspicuous as to be rarely collected. Probably it occurs in moist wet spots of early spring.

No. 18,031. *Orthocarpus purpurascens* Bth.

Woodward Reservoir*, sw. side, c. 6 mi. sw. of Eugene, Apr. 24, 1937. 170 ft.

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No. 18,032. *Myosurus* wet flat.No. 18,033. *Tillaea bolanderi*.

This seems a real rarity (see p.

No. 18,034. *Downingia*

Lobes upper lip coiled outward, thus overlapping below. Lower lip at right angles to tube, trefoil-shaped, the lobes truncatis, apiculate; lip light purple with a central field (quadrate) of white, with two sulphur spots in center at base, the margin of base (at throat) with 3 purple dots. At the throat 4 horns, 2 arising from the sulphur spots, 2 arising from or produced from margins of lower lip.

No. 18,035. *Marsilea*No. 18,036. *Briza minor* L. (det. Beecher Crampton, 7/37)No. 18,037. *Allocarya stipitata* Greene var. *microantha* Nees.

Knights Ferry, c. 4 mi. western-
ly on road to Eugene, Apr. 24, 1937.
Stanislaus Co.

"No. 18,038. *Limnanthes Douglasii* R. Br.
var. *rosea* (Benth.) C. T. Mason
Wet swale in the hills. The

corolla is white, turning pink
in drying.

"No. 18,039. *Delphinium* ~~*herpessum* Gray~~ *variegatum* T. & G.

Open dry gentle slope in
grassy field.

"No. 18,040. *Mn*
Dry ground.

"No. 18,041. *Mimulus guttatus* PB.
Forming color sheet in wet
swale.

"No. 18,042. *Layia fremontii* (T. & G.) Gray

Rays pure white, light yellow
at base. Grassy slope in swale
— On a little hillslope facing west, all
grassy, a colony of *Brodiaea laxe*,
well grown rise above the rest of the
vegetation, beautifully illuminated in
the afternoon and swaying gently in the
lightly moving air.

Foot hills, c. 4 1/2 mi. w. of Mount
ain Pass, Tuolumne Co., Apr. 24, 1937.

"No. 18,043. *Limnanthes* ~~*stricta* Jepson~~ *stricta* Jepson
Wet or swampy spot in the hills.
Cor. white, its petals regularly
convolute in full anthesis.

Soon the petals spread apart,
each petal curving its limb in
such wise as to make a cam-
pocopia-like structure or horn.

"No. 18,044. *Galium*

In swampy ground.

"No. 18,045. *Ranunculus*

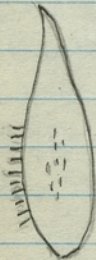
Swampy ground

"No. 18,046. *Sedella pumila* Bth.

Rocky or gravelly flat. See p. 60.

"No. 18,047.

Gravelly flat. Liliaceous. See
sketch of segments p. 60.
per. -

- Cont. *Sedella pumila*, no. 18,046.

Hairs on ventral line not
gland-tipped. A few scat-
tered short trichome-
like processes on side.

- No. 18,047: cont. from p. 59.



Apr. 24, 1937.

[Itinerary: Left Berkeley^(cf. p. 54) in my car
with my graduate student Robert
Francis Hoover on the morning of
April 23 and drove to Stockton.
Thence s.e. on the Farmington
road. The first stop was by a
small bridge at a little bend or
kink in the straight road, about
5 mi. easterly from Stockton. Went on
through Farmington and s. towards Eugene
but turned s. 2 mi. w. of Eugene and
went to Oatdale for lunch. Came back
to this point on Eugene road, stop-
ping to botanize on a low hill by sw.
side of reservoir*, the reservoir that
named on map (Cal. State Auto Map).
Thence east towards Eugene and
on to within 4 mi. of Knight's Ferry
where stopped to botanize on low hill
slopes.] * Woodward Reservoir

After turning south from the Farmington-Eugene road (see p. 61) we stopped on a hillside where there was good botanizing nos. 18,018-18,028. and where the rolling hills, utterly lovely, and the little flower-filled valleys are very lovely at this time.

We come back over this road; take the Eugene road. A lone church by the road 2 mi. w. of Eugene. On to Knight Ferry and up the Samora road to a point about $4\frac{1}{2}$ mi. west of Mountain Pass (nos. 18,043-18,047).

[— Napa Valley. Cont. from p. 52. The fresh burst of the spring time in the Napa Valley is now very delicate and lovely. Cold weather for so long a time held back the trees. Instead of the different species coming normally in succession all of them are now breaking their buds at once. The different shades of green everywhere enchant the eye. The lordly Valley Oak, its crown all over with tiny greenish

flowers — even he makes a slight concession to the seasons.]

— We turn southeasterly towards Chinese Camp and Jacksonville before reaching Mountain Pass (see p. 62). and stop over night at a roadside place* a few miles beyond (easterly) Jacksonville.

The following morning we botanize near Jacksonville and climb the hill to Chinese Camp where we found extremely good botanizing on the old placer sites.

* Dan's Motor Lodge.

This morning is very delightful. The air is gentle and balmy. An excellent breakfast at the wayside inn adds to our zest in life, and we perceive that all about us the spring flora is flourishing.

- ✓ No. 18,048. *Lupinus*
- ✓ No. 18,049. *Eschscholtzia* ^{*lobbii Green*} ~~*carolinensis*~~
 Bk. On broken rock strata outcrop
- ✓ No. 18,050. *Dioscorea* ^{*maximiliani*} ~~*hololepis*~~
 Rich soil of flat.
- ✓ No. 18,051. *Pityrogramma triangularis* (Kaulf.) Maxon
 var. *triangularis*
 Rock ledges, sunny slope. Fern.
- ✓ No. 18,052. *Poa scabrella* (Thurb.) Benth. ex Vasey
 (det. B. Crampton, 7/77)
 Grass on rocky hill slope.
- ✓ No. 18,053. *Echeveria* ^{*Dudleyi*}
 Corolla saffron-yellow, contracted upward beneath the acute spreading tips; strongly keeled on the back of the petals, especially downward; petals united at base for about $\frac{1}{2}$ line. Rock ledge, sunny dry slope.
- ✓ No. 18,054. *Melica californica* Scribn.
 (det. B. Crampton, 7/77)
 This grass on rocky slope.
- ✓ No. 18,054 a. *Lomatium*

No. 18,055. *Thysanocarpus radicans*.
Rocky flat.

No. 18,056. *Gnomicula*

Flat, old diggings. fls. yellow.

— *Downingia*. cf. no. 18,063.

Lobes upper lip oblong-acute, spreading backward parallel and in a line horizontal with platform of lower lip. Lower lip at right angles to tube, the lobes tre-foil shaped, that is the two lateral at right angles to middle lobe, all truncate-quadrate, apiculate. Corolla very light blue, the central field of white with a fan-shaped yellow spot at throat. Sine between lobes of lower lip cutting as a narrow cleft down through the white field almost if not quite to the yellow spot. Sinuses between upper and lower lip not extending

below platform; base of lower lip at throat without teeth or horns or color dots. At a little distance the white and pale blue of the lower lip are not obviously contrasted. A colony of the flowers tends to look white! — Chinese Camp.

No. 18,057. *Fritillaria*

Stem very deep-seated. My pick, even with great labor, would not, could not, did not lift a bulb, though much time was spent.

No. 18,058. *Zygadenus*

Adobe flat, forming colonies.

No. 18,059. *Chorizanthe*

Nearly bare gravelly flats.
(spots in)

No. 18,060. *Scribneria bolanderi* (Thurb.) Hack.
(det. B. Crampton, 7/77)

This grass grows in the adobe

flat.

- ✓ No. 18,061. *Layia fremontii* (T. & G.) Gray
Rays pure white, the lower
half sulphur yellow.
- ✓ No. 18,062. *Lomatium*
Adobe flat.

— Continued from vol. 58, p. 336.
Since I had botanized in the
cañon on the north side of Pope
Valley on May 22, 1938 (58:308)
and wishing to know its name
I made inquiry at a little ranch
at the mouth of the cañon;
but no person at the ranch knew
nor the name of the creek on
which they were. I learned
the name later, on Sept. 24,
1938 (cf. 58:381).

- ✓ No. 18,063. *Downingia*
See description on p. 66 ante.
Hog-wallow.
- ✓ No. 18,064. *Pitularia americana* A.Br.
~~*Isotria*~~ (det. R. Tryon, 1958)
Hog wallow.
- ✓ No. 18,065. *Mimulus tricolor*
Hartw. Wet flat. Corollas differing
greatly in size. There is a colony
a foot square right under my
eye — with quite small corollas
and a few quite large ones as
well as many of the interme-
diate normal size. There is like-
wise an occasional mutant as
to color — the red fading so nearly
white that the spots are shadowy.
- ✓ No. 18,066. *Linanthus bicolor*
(Nutt.). Moist flat.
- ✓ No. 18,067-A *Filserkea alba*
18,067-B *Linanthus striata* Sep.
Corollas a pure and very
beautiful white. This species

is dominant over ten acres or more and presents a most enchanting spectacle as the meadow slopes upward into the low hillsides. Its corolla is ^{an} open ^{low} bowl.

✓ No. 18,068. *Microseris*
Wet flat.

✓ No. 18,069. *Baeria*

✓ No. 18,070. *Nemophila maculata*
Bth.

— *Floerkea striata* Jap.
This is abundant in the lowest, that is wettest part of the meadow. The corolla parts are convolute; as the corolla ages the petals spread and each curves inward the side or margin of the limb in such a way as to

appear like a cornucopia or horn. The flower is also smaller than in the case of *Floerkea alba* which is right here in great abundance but occupies higher ground (cf. no. 18,067.)

✓ No. 18,070 a. *Juncus uncialis* Greene

- "No. 18,071. *Thysanocarpus curvipes*
Hook. The flowers seem
singular, as if this plant were
different from the ordinary form.
- "No. 18,072. *Coreopsis*
In colonies under bushes of
Geothlas curvatus.
- "No. 18,073. *Baeria*
- "No. 18,074. *Arenaria californica* (Gray)
Brew. Rocky floor of gentle
slope.
- "No. 18,075. *Platystemon californicus*
Benth.
- "No. 18,076. *Chaeractis*
- "No. 18,077. *Sanicula*
Flowers purple.
- "No. 18,078. *Sanicula*
Flowers yellow.
- "No. 18,079. *Plennosperma calif-
ornicum*

- "No. 18,080. *Plantago*
- "No. 18,081. *Melica californica* Scribn.
var. *nevadensis* Boyle
(det. B. Crampton, 7/77)
This grass grows on the
rocky flat.
- "No. 18,082. *Agrimonia*
Rocky flat.
- "No. 18,083.
This tiny caryophyll forms
amazingly small colonies on the rocky
flat which are extremely inconspic-
uous and seldom noted.
- "No. 18,084. *Gilia tricolor* Bth. var.
longipedicellata Greene.
- "No. 18,085. *Poa scabrella* (Thurb.) Benth. ex
Vasey
(det. B. Crampton, 7/77)
This grass makes scattered
small tufts on the rocky terrain, but
it is scantily represented even so.
- "No. 18,086. *Melica californica* Scribn.
var. *nevadensis* Boyle
(det. B. Crampton, 7/77)
This grass occurs in
scattered small tufts scantily.

- ✓ No. 18,087. *Lewisia rediviva* Pursh.
Rocky flat almost desti-
tute of other vegetation.
- No. 18,088. *Stylocline filaginea* Gray
This imbric grows on
an adobe bank.
- ✓ No. 18,089. *Chaetopappa exilis*
(Gray) Nees. This tiny composite forms
tiny colonies on the nearly bare
rocky floor of the flat. The heads
are close or compact ovate-cylin-
dric in nature - the presence of
erecting spreads them out of their
natural shape.
- ✓ No. 18,090. *Minulus douglasii*
In fruit, the capsules set
down amongst the basal leaves
forming tiny tufts on the
rocky floor of the flat.
- No. 18095-A

- Knights Ferry on road to Warner-
ville, Apr. 25, 1937. Stanislaus Co.
c. 350 ft.
- ✓ No. 18,091. *Psilocarphus tenellus* Nutt. var. *tenellus*

This imbric in a bog-
wallow, dry.

- ✓ No. 18,092. *Gratiola ebracteata* Bth.
Muddy wallows
- ✓ No. 18,093. *Allocaarya austinae*
Greene. Wallows.

- ✓ No. 18,094. *Doublingia*
Cor. minute. Cor. lobes of the two lips
subequal; white. Wallows.

- ✓ No. 18,095. *Silene sessilis* R. + P.

This composite grows on
the dry grassy flats and is not
rare in individuals at this spot
but is easily overlooked, being so
tiny, so close down against the
ground. See p. 79.

- ✓ No. 18,096. *Echinopsiforma nanum* (Hook. & Blake)
Sedella pumila (Bth.).

This is *Sedella* land; for several
miles one sees an acre of yellow
here or there, wherever the

rock outcrops to a surface terrain to give it a suitable habitat.

No. 18,097. *Isotria Medusa* A. A. Eaton
Wallow; with no. 18,092.

No. 18,098. *Downingia*

This is the same as the plant collected near the reservoir; see no. 18,034. The corolla outer limb is here dark purple or at least scarcely light purple. The lobes of the upper lip are turned downward, but the points "stand" straight down and do not coil in and overlap. There is variation in the details of position in this species as to these upper lobes without doubt.

No. 18,099 *Alopecurus saccatus* Vasey
(det. B. Crampton, 7/77)
This grass grows in a now

nearly dry wallow.

No. 18,100. *Deschampsia danthioides* (Trin.)
(det. B. Crampton, 7/77) Munro & Barr.
This grass with no. 18,099.

No. 18,095a. *Glennosperma*
with 18,095.

In a hollow of the low rolling
hills 7 mi. se. of Oakdale,
on the road to Wannenille,
Stanislaus Co., Apr. 25, 1937.

No. 18, 101. *Linanthus bicolor* (Nutt.)

Adobe soil.

No. 18, 102. *Allocaarya acantho-
carpa* Piper.

No. 18, 103. *Pogogyne zizyphoroides*

Bth. This mint was scarce at this
locality.

No. 18, 104. *Microseris douglasii*

Perfectly prostrate and not
at first glances giving no indi-
cation of flowers or fruit until
one looked more closely,
because the peduncles are
quite prostrate, more or less
concealed by the leaves and
with the heads recoiled.

Rays, i.e. ligules, short, lavender.

No. 18, 105.

This involoid plant is here
common and well-developed.

Oakdale, 7 mi. se., Apr. 25, 1937.

Stanislaus Co.

No. 18, 106. *Lepidium latipes* Hook.
With no. 18, 105.

- Cont. from p. 75. *Soliva sessilis* R. & P.
This, a Chilean species, must have
been introduced into California
very early. Thos. Nuttall got it and,
believing it new, named it *Soliva*
dancifolia and published it as
a new species in the Transactions
of the American Philosophical
Society, a name which was repeated
in Torrey & Gray, Flora of North
America, and in the Botany of the
California Geological Survey. In
the Synoptical Flora, Gray in 1878
reduced it to *Soliva sessilis*.
It is very inconspicuous, its leaves
and flowers being much alike
in hue, and the whole plant very
tiny.

— Honore de Balzac. He pokes fun at botanists who do not know the names of plants. cf. the Biography by Leon Gygis, section VII. (Great Short Biographies of the World).

— Left Berkeley at 1⁰⁰ ^{Apr. 30, '37.} and drove to Hollister. Put up at a hotel, my car being parked in the back yard. Went on next morning south to Paicines. Turned east.

no. 18,107.

Muloid plant in grassy field.

no. 18,108. *Microseris douglasii*

Grassy flat.

no. 18,109. *Platystemon californicus* Benth.
Somewhat sandy soil. Hillslope.

no. 18,110. *Anemone intermedia* B. & M.

no. 18,111. *Pectocarya penicillata* A. D. C.

no. 18,112. *Astragalus*

River bench

no. 18,113. *Chenopodium*

Sandy flat.

no. 18,114. *Sanicula*

Light soil; hill top. Cat. p. 84.

no. 18,115. *Lupinus*

River bench.

no. 18,116. *Poa scabrella* (Thurb.) Benth. ex Vasey
(det. B. Crampton, 7/77)

This grass grows on the

flat.

"no. 18,117. *Thelypodium flavescens* Wats.
det RCB 10/25/63
This *Thelypodium* is rare; grows
on a talus slope (dirt slide) *

"no. 18,118. *Psilocarphus brevissimus* Nutt.
Imbricoid plant in wallow.

"no. 18,119. *Micropus californicus* F. & M.
dry hill slope; imbricoid.

"no. 18,120. *Linanthus ambiguus*
Greene. (see p. 83). Dry hill slope.

"no. 18,121. *Delphinium variegatum* T. & G.
Small colony on hill top.

Cherry Hill School, e. of Panoche Pass

"no. 18,122. *Largia platyglossa* (F. & M.) Gray var.
campestris Beck
Panoche Valley

"no. 18,123. *Pectocarya penicillata* A. DC.
= *P. heterocarpa*
var. This large in Panoche Valley.
t. *heterocarpa* Torr. f.

"no. 18,124. *Lanthemum*

Panoche Valley.

* near Vaughan Ranch, Emmet

"no. 18,125. *Eriogonum gracillimum*

[In the next watershed
of Silver Creek, this species is
a dominant in place, abundant
on otherwise dry hills.]

~~*Sphaeralcea Parryi* (Greene) Jepsen~~

"no. 18,126. ~~*Sphaeralcea*~~
~~*Sidalcea diploscypha* Gray~~
(*malvastrum* Parryi Greene)

"no. 18,127. *Salvia arduacea* A. N. S.

break.

Silver Creek, near junction Panoche

"no. 18,128. *Amsinckia strimmaria* H. & A.

~~var. fuscata~~ ^{H. & A.} *Gypsophila* hills. glaucous.
Coloring wide areas where it
is the only species on naked hills.

- Cont. from p. 82, no. 18,120. = *Linanthus rattanii* (Gray) Greene.

no. 18,129. *Hordeum depressum* (Scribn. & Sm.)
(Det. B. Crampton, 7/27) Rydb.

This grass on the plain near
junction Mendota road and Trans-
quility road.

no. 18,130. *Atriplex torreyi*

About 15 mi. S. of Mendota
this shrub is scattered over
the plain in such a way as
to give it a distinct character.
It is the only woody growth.

no. 18,131. *Lepidospartum squamatum* Gray

This composite shrub
was taken in Contra Creek. It
colonizes the Coalinga Oil Hills?

Cont. no. 18,114. This *Laricula* has
a deep-seated root-crown; from
this root-crown, 3 or 4 in. deep, arise
5 or 6 shoots of the season. All but
2 were removed in spec. taken.
The single leaf is from a dif-
ferent plant.

no. 18,132. *Atriplex torreyi*
Flat; 4 ft. h.

- *Acaculia californica*. single tree

no. 18,133 *Selphium gypsophilum*
Ewan

Fls. dull white. Hillside colony.
Spur slightly brown-shaded, dull brown spot on base.
Seen only once. Side sepals below apex.

no. 18,134. *Poa scabrella* (Thurb.) Benth.
(Det. B. Crampton, 7/27) ex Vasey

Grass, hillside; common.

no. 18,135. *Astragalus*

This loco by, that is, in
plain near road, between Blackwell
Corner and Lost Hills. I saw only
two individuals on that long road;
both near the road. The individual
from which spec. was taken had
50 or 60 such stems from the
root-crown.

Distribution of *Atriplex torreyi*
From Blackwell's Corner *Atriplex*
torreyi (cf no. 18,132) becomes
abundant on the plain east-

ward to Lost Hills. It is the only woody growth on the plain. In this region and on east to Semitropic it is so numerous in individual that as the eye roams over the level the stand appears to make a perfectly close stand. The shrubs are, however, spaced so that there is more or less "open." This formation continues to Semitropic and Wasco. Agriculture has cleared it towards Wasco but one may see a cultivated field (with a wheat or barley) alongside an ^{stand of} area with its thick primitive stand of *Atriplex torreyi*.

* p. 87. The work was done at Nick Hendscliff's shop (Signal Station). He charged only 75 cents!!

Stayed the night at Hotel Maronet in Bakersfield (May 1). The next morning it was necessary to grease clutch of car which took a long time, there being no way to get at the housing save by taking up the floor boards*. So it was eleven o'clock or a bit later by the time I found myself out on the Caliente road. * See p. 86.

* No. 18, 136. *Brodiaea*

Anthems approximate in center, a U-shaped notch in top; stamens in nodia retruse, a short blunt point in the shallow notch. Sandy soil.

* No. 18, 137. *Astragalus*

* No. 18, 138. *Hemizonia pallida* Keck

* No. 18, 139. *Lotus strigosus* Greene

* No. 18, 140. *Lupinus*
Cor. white, aging pink.

"No. 18, 141. *Malacothrix coulteri*

This composite for past flowering.

"No. 18, 142. *Microseris douglasii*

Sandy plain.

"No. 18, 143. *Navaretia pubescens* H. & A.

Sandy plain.

"No. 18, 144. *Cryptantha flaccida*
Greene."No. 18, 144a. *Lupinus*

Limon.

"No. 18, 145. *Phoenactis*

Limon

"No. 18, 146. *Astragalus*On Tehachapi road, near
second branch road to Caliente, going south.
Colony of it in field. Tehachapi Mts."No. 18, 147. *Rumex hymenosepalus* Torr.

Sandy soil n. of Mohave sta.

"No. 18, 148. *Coreopsis*This forms a yellow
sheet for 3 or 4 miles, from

Mohave sta. eastward. Everywhere the plain is covered with the small bushes of *Atriplex* and other shrubs. Below where shrubs on the sandy plain the ^{gray} brilliant yellow of the *Coreopsis* changes the scene from the dullness of the winter landscape. Full eight thousand acres are yellow with it.

"No. 18, 149. *Streptanthus inflatus*

The individuals are not as large as in some years, but never before have I seen the Desert Candles so numerous. They march by millions over the mesas, filling little spaces or crowding the spaces between the shrubs like untold battalions firmly erect on duty, their light yellow "candles" and purple tips shining in the sun, filling the whole land from Mohave sta. to Kramer.

As I come down from Tehachapi Pass the great snowy crests of the San Bernardino fill the sky on the southern horizon. I drive on east to Barstow and take a cabin in an auto camp where I post up specimens.

The next morning I go on towards the Providence Mts. rapidly. My only stop, before Essex, is near Summit road station, which is on the low-lying slopes at south end of the Marble Mts., about opposite the railway station of Badiz.

Richard Drent.

No. 18, 150. *Eriogonum deflexum*
var. deflexum
Fls. white, deflexed.

No. 18, 151. *Lygodesmia exigua*

This composite seemed scarce.

No. 18, 152. *Cryptantha angustifolia*
Greene.

No. 18, 153. *Eriogonum inflatum*
var. inflatum The small plants have scarcely or not at all enlarged stems.

No. 18, 154. *Stephanomeria pauciflora*
This cichoriad forms an entangled bush 26 in. high and 30 in. broad.

Essex, San Bernardino Co., May 3.
No. 18, 155. *Lepidium*

sandy plain.

No. 18, 156. *Cryptantha angustifolia* Greene. Sandy plain.

No. 18, 157. *Malacothrix glabrata*
This cichoriad

has a definite habit: the stems spreading or ascending, the leaves erect in the center in a close erect tuft.

No. 18, 158. *Eriophyllum*

✓ No. 18, 158a. *Cryptantha pterocarya* Greene

✓ No. 18, 159. *Cryptantha angustifolia* Greene.

= *Eriastrum*
✓ No. 18, 160. *Gilia eremica* Jepson.

Cor. pale lavender, mainly one color without pronounced markings, the 2 lobes of the lower lip divergent. = *Hugelia eremica* Jepson

✓ No. 18, 161. *Eriogonum maculatum*

✓ No. 18, 162. * *A. ob. var. spissa* Jepson

✓ No. 18, 162a. *Pectocarya platycarpa* Jtn.*

✓ No. 18, 163. *Cryptantha micrantha* Jtn.

This borage often grows in tiny colonies amongst the open vegetation of the plain.

* = *P. linearis* Ob. ** *P. heterocarpa* Jtn.

✓ No. 18, 164. *Greeneochloa circumscissa* Rydb. This borage seems ^{rare}.

✓ No. 18, 165. *Lungwortia schottii* (Torr.) Greene. Cor. small, pale white, the throat with a definite color marking. Lobes of lower lip spreading right and

(Discarded) = *Cryptantha* (Left.)
✓ No. 18, 165a. *Greeneochloa circumscissa* Rydb.

No. 18, 166.

This spm. reduced by cutting away over half.

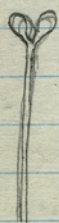
✓ No. 18, 167. *Baileya*

✓ No. 18, 168. *Thelypodium*

- I turn off the highway at Essex onto a dirt road running northwesterly into the Providence Mts., to Mitchell's Barren, where I arrive at 5 o'clock, 22 miles, Monday, May 3.

* = 1732 ft. at station on railway.

- No. 18,169. *Menodora scabra* Gray.
Corolla yellow, 5 lobes ob-
ovate. Stamens 3. Style shortly 2-cleft
at apex. Calyx 5 to 10-cleft.



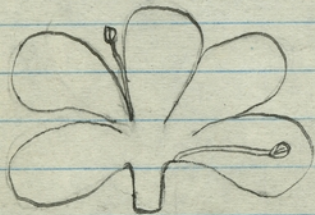
Stigmas 2.

← style.



Calyx

Calyx-lobes: 6, 8, 10, 5.



corolla

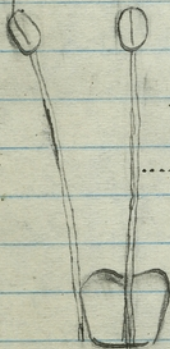
Cor-tube 1 line long, slightly
short-hairy inside at apex. Cor-
limb 6 to 7 lines wide.

Leaves lanceolate, 1 in. long.
or oblanceolate to linear, $\frac{1}{2}$ to

- No. 18,170. *Arenaria macrodenia* Wats.

Rocky slopes. Heavy-stemmed
plants. Perianth campanulate.

Stamens 10; the 5 alt-
ernate with petals
bear a gland at base,
the anthers of these
stamens dehiscent first.
Cor. white



....fil.

....gland.

- No. 18,171. *Bastillea chromosa* A. Nels.
Calyx shallowly cleft ^{in front}

Behind
rather deeply. Lower lip barely visible
at base of cleft in front; galea
partly exerted, greenish, bordered
longitudinally in front by a narrow
red margin. Stamens prominent
by their anthers in pairs, the
lower pair of filaments the longer.

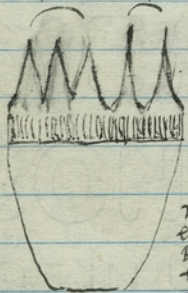
- Cont. *Menodora scabra* Gray.
Leaves not well-described in
Manual; nor flowers.

No. 18, 172. *Hedeoma thymoides* Gray. =
H. nana Briq. ^{sp. californica} This mint is a very low plant
from a scarcely woody base; it is
4 to 7 inches high. Cor. pale purple;
its upper lobe erectish, shortly notched,
its lower lip expanded, shortly lobed,
the lateral lobes a little larger,
the lip with markings of dark
purple lines alternated with nearly
white lines. Flower $4\frac{1}{2}$ lines long.
Calyx-lips: upper with 3 narrow
obtusely acute teeth; lower with 2
narrow-lanceolate teeth, these
slightly longer ^{than} those of the upper
lip. Stamens 2.

Inhabits rocky walls (in crevices)
and under ledges.

Sketches in field of no. 18, 172.

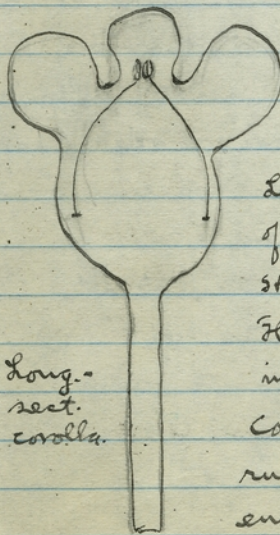
upper lip lower lip.



Calyx
spread open.

Note, the
horizontal
band of
hairs at
throat; the
hairs stiffly
erect in a row.

Style:
the stigma
very unequal,
one long and
coiled, the
other reduced
to a mere
stub.



Lower lip
of corolla.

Stamens 2.

Throat slightly hairy
inside.

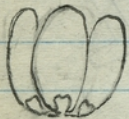
Corolla tube slender, ab-
ruptly expanded into an
enlarged throat.

Long-
sect.
corolla.

No. 18, 173. *Brickellia arguta* Rob.
Rocky walls.

No. 18, 174. *Ghaenactis*

Cor.-tube 7 lines long,
very long and slender.



pappus-scales
4 broadly
oblong, obtuse
scales, 4 very
short ones at
base.

There may be,
of the longer
set, one or two

smaller or supplementary scales.

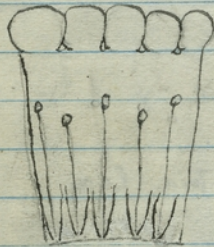
Likewise of the calyculate set,
there may be one or two extra. These
small scales are mostly retuse
or notched at apex.

As the young cylin-
dric heads come into
anthesis, the corollas
diverge, spread or
curve away from each
other. The head of
flowers is, therefore,
open in a way different
from the crowded heads
of other species.

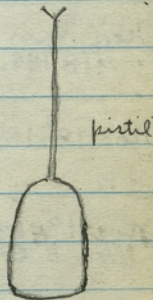
No. 18, 175. *Fallugia paradoxa*
Cañon bottom in a colony below
Mountain Spr. Petals white, orbicular
or suborbicular

No. 18, 176. *Phacelia rotundifolia* Torr.

Tiny plant in crevices and shade
of cavernous rocks. Cor. white. Leaves sub-
cordate at base, mostly; but no two leaves
alike.



Corolla
spread
open.



pistil

The corolla-scales at base of fila-
ments are extremely reduced and very
difficult to see. Indeed in several
corolla I believed them quite obsolete;
but in the above figure they are rep-
resented as in one favorable corolla.
Even so they are discernible with
difficulty. Yet again I find an

example in which the scales tho' so narrow show as a distinct ring.

- No. 18, 177. *Linum usitatissimum* L.
Petals pale blue, 5 to 6½

lines long.

- No. 18, 178. *Tricardia watsoni* Torr.

Past anthesis.

Fountain Cañon, Providence Mts.

- No. 18, 179. *Microris*
May 6, 1937.

Bushy gravelly slope.

- No. 18, 180. *Ericameria cuneata*

Clump on wall of cliff.

- No. 18, 181 *Stipa speciosa* Trin. & Rupr.
(Det. B. Crampton, 7/77)

This grass grew on a

steep fertile slope.

- No. 18, 182. *Cryptantha barbigena* (Gray)
Greene

Sandy-gravelly slope.

- No. 18, 183. *Phragmites australis* (P. communis)
(Det. B. Crampton, 7/77)

This reed forms a colony in a wet spot in cañon bottom just below the spring. 7-8 ft. h.

- No. 18, 184. *Garrya*

Short many-stemmed shrub

- 12 ft. broad and 8 ft. high. Rocky bank in bottom of cañon.

- No. 18, 185. *Salix*

4 to 8 ft. h.; only ♂ seen.

Wet cañon bottom.

- No. 18, 186. *Poa longiligula* Scribn. & Willd.
(Det. B. Crampton, 7/77)
This grass forms heavy stools on loose fine talus.

- No. 18, 187. *Arabis*

Cor. purple. Gravelly flat.

- No. 18, 188. *Poa longiligula* Scribn. & Willd.
(Det. B. Crampton, 7/77)
This grass grows in gravelly soil.

- No. 18, 189. *Pharbitis californica* Esch.

var.

Common bottom,

shrub. 5-7 ft. h.

- No. 18, 190. *Cheilanthes covillei* Maxon

This fern forms a fine spectacle - growing at the ground level of a huge boulder, it forms a regular

band, dark green with silvery fronds
rising from behind. young

No. 18, 191. *Purpurea fasciculata* Gray.

Plant with a velvety coat of
straight hairs; "hirsute" is better
than the "bristly" of Manual.

Thickety shrubs 5-6 ft. h.

No. 18, 192. *Cryptantha angulata*

~~Jepson spn.~~ Corolla-limb a curving
tiny star elevated a little above
the contracted mouth of a relat-

ively large calyx. Sandy flat.

No. 18, 193. *Melica imperfecta* Trin.
(Det. B. Crampton, 7/77)

This grass on a sandy-
gravelly slope.

No. 18, 194. *Erigeron pumilus* Nutt. sp.

~~concinoides Crampton~~

Ray: pastel pink; sandy flat.

No. 18, 195. *Ephedra*.

♂ Bushy shrub 3-5 ft. h.

No. 18, 196. *Pinus monophylla* Torr. ^{from}

Seedling; under rock.

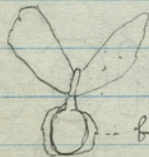
No. 18, 196 a. *Lomatium nevadense*

var. *Parishii* (C. & R.) Jeps.

from fragmentary - *Le. umbellifer*.
Cand. at intersection of E. & Court Sts.

No. 18, 197. *Allium*

Gravelly canon bottom.



--- wings on lobe of ovary.

--- back of lobe of ovary.

ovary with 2 broad slight diverging
wings on each lobe. not spreading
as much as shown in my diagram.

Per.-segments dull or fleshy white,
with a broad broad midvein

No. 18, 198. *Lupinus*

Banner white, shorter than

the purplish broad wings which com-
pletely cover the keel which is non-ciliate.

Sandy flat.

No. 18, 199. *Poa scabrella* (complex)

(Det. Beecher Crampton, July 1972)

This grass on a sandy-gravelly
spot.

No. 18, 200. *Pityrogramma triangularis* (Kaulf.) Maxon
var. *triangularis*. This fern grows under
rocks.

No. 18, 201. *Thalloid Hepatic*
(Toile) This liverwort in deep
shade under great rock. Has a few
fruits on under side thallus.

No. 18, 202. *Rhamnus crocea* Nutt.
var. *ilicifolia* (Keel) C. B. Wolf Canyon bottom, very
stocky many-stemmed shrub 3 to
4 ft. high.

No. 18, 203. *Stylocline micropoides* Gray
This involid in sandy spots
No. 18, 204. *Linanthus aureus* var. *decorus*
(Gray). Cor. white with yellow
center. Sandy spots. Cont. p. 118.

No. 18, 205. *Pellaea mucronata* (D.C. Eaton)
D.C. Eaton var. *mucronata*
This fern grows under rocks.

No. 18, 206. *Rhus trilobata* Nutt.
Bush 3 to 4 ft. h. Gravelly
flats,

No. 18, 207. *Euphorbia incisa* Engelm.
Glands 4, yellow,
fan-shaped, serrulate or eroseulate,
gravelly flats.

No. 18, 208. *Cheilanthes covillei* Maxon
This fern grows under rocks.
No. 18, 208a. *Oenothera*
No. 18, 209. *Lepidium*

No. 18, 209a. *Gilia* ~~*stellata*~~ *stellata* Heller with var.
No. 18, 210. *Gilia ophthalmoides* Brand
var. *ochroleuca* (Jones). *G. ochroleuca* Jones.
Gravelly slopes.

No. 18, 210a. *Linanthus bigelovii* Greene.

No. 18, 211. *Arabis*
Mitchellii Parry. Rocky walls.

No. 18, 212. *Arabis*
With preceding.

No. 18, 213. *Notholaena Parryi* D.C. Eat.
(det. R. Tryon, 1957)
This fern on rocky walls
in crevices. Mitchell's Caverns.

No. 18, 214. *Anemone tuberosa* Rydb.
Mitchell's Caverns. Rocky walls.

The great table-top mountain nr. of
Mitchell's Caverns 4 miles or so is called
Wild Horse Mesa says J. E. Mitchell.

- ✓ No. 18,215. *Yucca baccata* Torr.
Flowers open-campulate, 3 in.
long. Filaments thick and broad, almost
semi-cylindric, erect, at least in early
anthesis. Perianth creamy-white,
the outer segments brown-tinted on the
outside. Filaments shorter than
style. Plants 2 to 5 ft. h., the
leaves with fibres coiling off on their
margins. Style very thick, 3 lines
long. Filaments only slightly thickened
at apex. Foliage rosettes ^{bluish} glaucous.
Panicle with drooping fls., 15 in. long.
↑ Erect,
Stems lying along ground, developing ^{rosettes} ^{in many places}
= *Y. schidigera* Rocal.
✓ No. 18,216. *Yucca mohavensis*

Fls. tending to be globose in anthesis,
1 to 1½ in. long. Filaments club-
shaped at apex, the club-shaped
part abruptly rotate or turned
outward. Filaments as long as long
as pistil. Foliage yellowish-green.

- ✓ No. 18,217. ^{Haplopappus} (~~Stenopappus~~) (*linearifolius*)
^{var. interior} Bush 2 to 2½ ft. h., now
(cov.) Jones
completely covered with heads in
anthesis and dominant over an
acre here, an acre there.
✓ No. 18,218. *Syntrichopappus*
Often forming colonies 10 or 20
ft. across in open amongst
brush on the sandy gravelly floors
of tilted mesas.
✓ No. 18,219. *Salvia* ^{Dorrii (Kell.) Abrams} ~~carnosa Dougl.~~
Abundant in spots on the
mesas and in the canyons.
✓ No. 18,220. *Cryptantha barbiger*
Greene. Gravelly mesa.
✓ No. 18,221. *Cryptantha barbiger*
Greene. Gravelly mesa.
✓ No. 18,222. *Cowania mexicana* var.
stanisburiana (Torr.) Jeps.
✓ No. 18,223. *Nemacladus*
Fine gravel.
✓ No. 18,224 *Notholaena Jonesii* Maxon
This tiny fern grows in shady rock crevices

List of species.

- *Covania mexicana* var.

Abundant on the steep rocky slope, now in full fl., bushes 4 to 5 1/2 ft. h., one trunk 6 in. diam. at 1 ft.

- *Prunus fasciculata*
- *Cologue ramossima*
- *Syntrichopappus fremontii*
- *Eucelia farinosa*
- *Salsola mohavensis* abundant
- *Acacia greggii* wholly leafless.
Spreading widely over ground.
- *Sternotopsis*

Coloring cactaceae

- *Rhamnus ilicifolia* var.

Very stocky and dense round bush 5 ft. h. In shade of rocks or under bottom. up to 6 or 7 ft. h.

- *Rhus trilobata*

Bush 5 ft. h. in shade of rocks.

- *Philopsis linearis*
- *Salazaria mexicana*
- *Pinus monophylla*
- *Juniperus utahensis*

110

Flat below Mitchell's Canyon,
Providence Mountains, May 6, 1937.
c. 2500 ft.

No. 18,225. *Ericameria*

Common low bush, 9-12 in. h.,
on the flat below (e.) Mitchell's Canyon.

No. 18,226. *Delphinium parishii* Gray
Fls. light blue. With 18,225.

No. 18,227. *Krameria*

Low bush $1\frac{1}{2}$ ft. h.,
spreading, about 12 to 15 in. wide.

- *Cassia armata*

Gilroy Mine, Providence Mts., May, 1937.
c. 4000 ft.

No. 18,228. *Lupinus*
Diffuse. Banner

Gilroy Mine

No. 18,229.

This umbellifer grows in dry
hard packed gravelly soil. Gilroy mine.

- Pleistocene plants in the desert.

111

Gilroy Canyon, Providence Mts.
c. 4000 ft (base of cañon), Thursday, May, 6 1937.

No. 18,230. *Traxinus anomala* Wats
Circle of root-crown sprouts, the
circle 8 ft. across, stems 12 ft. h.,
the diameters 1 to 3 in. at 4 in.
above ground. Canyon bottom.

(18,231)
No. ~~*Echeveria*~~ ^{*Hudleya*} ~~*undat.*~~

Panicle coral-pink!!

Corolla greenish-yellow, contracted
upward to a narrow opening, the tips
of the petals scarlet. Rocky ledges.

No. 18,232. *Pentstemon palmeri* Gray.

Panicle strictly 1-sided.

Corolla luminous pink, its tube short,
its throat extremely globose-expanded
though wider a little than it is deep
fore and aft, the stamens, coiled
in pairs, are prominent by their
anthers in pairs on the upper side
of the throat and quite concealed
unless one looks for them; the hairy
sterile ^{filament} standing in the entrance

- cont. p. 114 -

Pinus monophylla

From the summit or backbone of the high ridge between the forks of Gibroy Cañon there is W. B. L. a fine view of the higher slopes of the main ridge westward and the bounding walls of the upper part of the cañon and the stand of One-leaf Piñon upon it. For this desert range it is a dense stand. As one looks up certain slopes the crowns, on the level of the eye, seem as it were to close the view. The trees are small - 6 to 10 ft. h., some higher, and a few up to 18 or 22 feet. In the lower part of the cañon the large trees were long ago cut out for the engine fuel at the Bannananga King mine. We see their stumps remaining to this day. They grow not only on the slopes of the cañon but also

here and there on the vertical walls! on ledges or clinging in a crack on a cliff.

There is an Agave here. Its dead stems show here and there on the walls.

Lower part of cañon:

Yucca mohavensis 3 to 4 ft. h.
some to 10 ft.

Yucca baccata

Larrea tridentata

Salvia mohavensis acc.

Thamnosma montana.
Mary Beal.

— Mr. Mitchell says rains in this region make the desert very soft. one goes right down in the mud.

cont. from p. 111.

on the lower side of the throat. Sterile
densely hairy at tip and along upper
filament part on upper side. Upper lip closely
recurved; lower lip abruptly spreading, ^{short,} marked
by longitudinal dark lines at base.

"No. 18, 233. *Cryptantha angulata*
Jepson sp. n. Corolla almost minute, its
thrust out from the rather large ^{limb}
calyx like a star. Sandy-gravelly
slopes. cf. 18, 192. = *C. gracilis* Oakes.

"No. 18, 234.

This umbellifer group in
a heavy tuft in bottom of cañon
under edge of a great boulder
in a crevice. Note the broad sheaths
and persistent petioles.

"No. 18, 235. *Notholaena Jonesii* Maxon

This tiny fern grows in
the darkest crevices in the rocks.
It seems very rare.

"No. 18, 236. *Astragalus newberryi*
Gray. Extremely dense thick mat
forming a heavy mass of pods

and foliage. On open shoulder of ridge

"No. 18, 237. = *H. nana* ssp. *californica*
Hedeoma pterisoides Gray.

Same as no. 18, 172. Rocky
slope. Infrequent.

"No. 18, 238. *Arabis*

Rocky north slope, shade of
rocks.

"No. 18, 239. *Cheilanthes Feci* Moore

This fern grows under the
edge of rocks on steep north slope.

"No. 18, 240. *Poa scabrella* (Thurb.) Benth. ex Vasey
(det. B. Crampton - 7/27)

This grass on ^{fine} talus, north slope.

"No. 18, 241. *Poa longiligula* Scribn. & Will.
(det. B. Crampton - 7/27)

This grass grows with 18, 240.

"No. 18, 242. *Mertensia Claytonia perfoliata*
Donner & Willd. On steep north slope, rich
soil, shade of rocks

"No. 18, 243. *Myosurus*

In shade of a tiny cavern
in the rocks, moist and shady.
Nothing could have been easier than

to overlook these tiny plants.

no. 18, 244. *Verbena bipinnatifida* Nutt.see p. 119, 142. Rich flat in cañon bottom.
no. 18, 244a. *Anemone tuberosa* Rydb.no. 18, 245. *Lupinus*Wings purple; banner
purple with a central quadrate
spot of white. Rich flat in cañon bottom.no. 18, 246. *Luzia glandulosa* (Worh.) N. A.

Rays white, aging pink.

Rich flat at forks of north cañon.

no. 18, 247. *Dichelostemma pulchellum*

Under bushes.

no. 18, 248. *Castilleja*

Protected by bushes on flat.

no. 18, 249. *Poa scabrella* (Thurb.) Benth. & Vasey
(det. B. Crampton - 7/77)

This grass on rich flat.

no. 18, 250. *Lotus rigidus* (Benth.) Greene

10 to 15 in. high, forming

a thick clump 1 ft. wide.

Corolla yellow, the keel and wings
aging bright brick-red. Keel $\frac{3}{5}$
as long as wings.no. 18, 251. *Senecio stygius* GreeneIn protection of bushes,
rich flat. Rays canary yellow.no. 18, 252. *Astragalus nutans* Jm.Cor. purple. Quite prostrate, form-
ing circular mats 6 to 20 in. broad.no. 18, 253. *Sitanion hystrix* (Nutt.) J. C.

(det. B. Crampton - 7/77)

This grass on rich flat.

no. 18, 254. *Hedeoma pycnostachya* Gray.= *H. nana* (Brig.) S. P. ^{californica}
This mint from sandy-
gravelly stream-bottom; same as no. 18, 172.no. 18, 255. *Lesquerella*Cor. canary yellow. Prostrate
in stream bed. Crucifer.no. 18, 256. *Mirabilis*

Cor. crimson. Bench of stream.

no. 18, 257. *Mirabilis*no. 18, 258. *Osmothera caespitosa* Nutt.
stream bed. Only one

clump seen; three plants.

no. 18, 259. *Phacelia campanularia*
Gray. stream bed. Desert Blue-
bells.

No. 18, 260.

Rays 11-17. This composite occurs
in only a single, observed clump.No. 18, 261. *Gilia aggregata* (Pursh)
(Greene) J. Gray.
Sps. var. *texana* / Cor. scarlet. Note

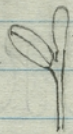
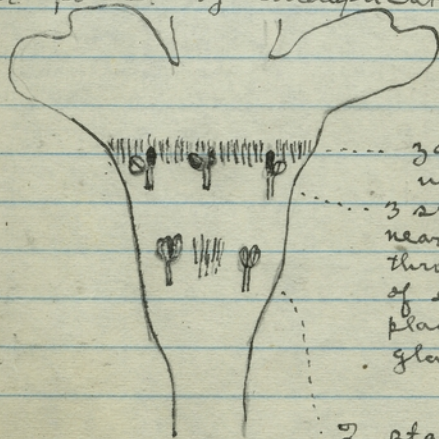
the first-year rosette. Stream bed.

No. 18, 262. *Cirsium*Stems 4 to 5 ft. h., a
colony in a shallow gully a little
below the cabin at Gibroy Mine.

- *Lionanthus aureus* var. *decorus* (Gray) no. 18, 204,
continued. Calyx remarkably
diverse as to pubescence or the
lack of it. Stamens inserted in
throat below sinuses, $\frac{1}{2}$ as long
as corolla-lobes. Collection from
one spot a few yards square.

Thursday, May 6, 1937.

San Bernardino Co.

- Cont. *Verbena bipinnatifida*. no. 18, 244.
Corolla with a band of straight erect
hairs at mouth.anther ...
upper stamens: →... gland rising
above anther
at back.Calyx ribbed, the ribs hirsute, intervals
membranous; teeth membranous winged
and obtuse but appearing mucronate
or pointed by emduplication.zone of hairs at
mouth of throat.3 stamens inserted
near mouth of
throat; one anther
of each pair re-
placed by a honey
gland.2 stamens inserted
near base of throat;
both anther cells
perfect.

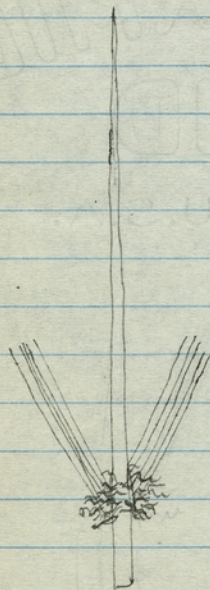
Perennial!!

Corolla light blue.

Corolla-lobes matched.

- Cont. *Layia*

no. 18,246.



Pappus bristles or
rather awns with
a set of bristles on
each side above
the base. These
bristles are more
ascending than
shown in diagram.

There is a woolly
tuft of hairs at
the point where
the bristles
are given off.

Awns 10.

✓ No. 18, 263. *Lupinus*

Cor. whitish; wings as long as banner, slightly pink-tipped. Keel as long as wings, but covered by them, broad, blunt, non-ciliate.

✓ No. 18, 264. *Erigeron pumilus* Nutt.*ssp. concinnoides* Cronq.✓ No. 18, 265. *Linanthus* ^{*Gaurus* var. *decorus*} ~~*lemonii*~~

Greene. Cor. white; throat yellowish outside. No! *L. bealianum* Jepson.

— Cont. no. 18, 223. Corolla 2-lipped, 3 lobes of upper lip oblong-ovate, acute, brown-tipped; 2 lobes of lower lip oblong, their spreading tips connate, the aperture or interval between them covered by the stamens. Glands ² on upper side: ^{each with 5, 4 lobes} (3) rods deflexed from summit of slender process. The processes are yellow, erect on upper side of

May 7, 1937.

(Friday)

flower, the translucent rods turned backward.

✓ No. 18, 266. *Chaenactis*

✓ No. 18, 267. *Allionia incarnata* L.
~~*Weddellia*~~

Per. crimson.

No. 18, 268. *Oenothera primiverna* Gray
Pods short, stout & round.

Cor. yellow.

— Miss Mary Beal comments on the roar of the Mohave River when "it comes down" in the winter.

- *Philopsis linearis* Tree 12 ft.
 h., trunk 6 in. diam. at one foot.
- *Echinocactus cylindraceus* ^{Engelm.} Barrel Cactus.
 All the barrels lean a little to the south!! These are on the mesa flat.

- *Baileya multiradiata*
- *Aster fortifolius*
- *Eucelia farinosa*
- *Yucca mohavensis*
- *Cologyne ramosericea*
- *Eriogonum inflatum*
-
- *Geranium Engelmannii*
- *Mammillaria tetrancistris*
- *Thamnosma montana*
- *Eriogonum fasciculatum* var.
- *Larrea tridentata*
- *Sphaeralcea ambigua*
- *Salazaria mexicana*

Leaves Tail

Barrel Cactus

- *Eucelia farinosa*
- *Ptilostrophe coeperi*
- on the slope slanting down into a
 draw from the open mesa the above

species were noted. In the "open" the place was made gay by the individuals of *Baileya multiradiata* in full flowers, its fine, yellow glowing in the sun, and contrasting with the clumps of Aster (no.) crowned with a mass of lanceolate, -rayed heads. It is a rocky slope with the general slope sandy or finely gravelly.

- *Alnus trilobata*
- *Pinus monophylla*
- *Covania mexicana*
- *Rhamnus* ^{*Yucca* var.} *ilicifolia*
- *Yucca mohavensis*
- *Prunus fasciculata*
- *Opuntia mohavensis*, its slabs on side and working out end to end in a characteristic fashion.
- *Pentstemon* (no. 18,284.). At base of 60 ft. cliff on north side. Bush 2 ft. h. and 3 ft. broad.

Deer-horn Cañon

- *Sphaeralcea ambigua*
- I gaze up at the cliffs on north side of the lower cañon and there high in air, 400 to 600 feet above the top of the talus. I note one very large wide-spreading tree; it seems 28 ft. h. and trunk $1\frac{1}{2}$ ft. in diam. My eye wanders along the cliff

summit and there against the sky-line stands out, erect and sentinel-like, an Agave 16 ft. h. In a vertical crack of the rocky wall of the cliff, 450 feet up, in the solid rock is a young barrel cactus!! Also a *Coumou mexicana* var. *stansburiana* bush on the wall, in flower, 200 feet up. Almost vertical wall.

- *Mimulus freibellii*. Plants low-spreading or decumbent, 2 ft. broad.
- *Mimulus* no. 18,287.

Perianth white, its lobes with a broad notch so as to be slightly notched, the division between the lobes a cleft or narrow slit.

Perianth with 5 nerves, running from center to middle of notch. Anthers yellow. Stamens, much-exserted.

5 pink spots in throat, ^{and style} weak or obscure.

In other places on the walls 200 to 300 feet up are Barrel Cactus *Yucca mohavensis*, *Opuntia mohavensis*.

- *Yucca baccata*. Its trunk, when it has a trunk, tends to lie along the ground and produces 2 or 3 or 4 rosettes, and perhaps branch. The panicles are now in full anthesis, 12 to 16 in. long, erect, thatched downward with the drooping flowers.
- *Salvia canosa* Dougl. Often extremely luxuriant in flowering at this time. Bushes 1 to 2 ft. h., 3 to 5 ft. broad.

- *Salvia* (no. 18,291) *canosa* Dougl. Cor. white; lateral lobes lower lip rounded, the middle lobe much long, truncatish; upper lip cleft, its lobes ovate. Stamens 2, fil. jointed.

✓ No. 18,269. *Lycium andersonii* Gray.

Shrub 3 ft. h. Berry size
of a very small pea, light orange
yellow. Domingo Ranch.

✓ No. 18,270. *Krameria*

Three stems anthers
on lower side of fl., ovate, thin; the
2 glands laterally to ovary quadratish,
not very obviously composed of longi-
tudinal strands. Domingo Ranch

✓ No. 18,271. *Baileya multiradiata*.

Rays brilliant yellow.

Sandy-gravelly slope, Bonanza King
Mine. For associate species see p. 125.

✓ No. 18,272. *Oryzopsis hymenoides* (Roem.
& Schult.) Rich. (det. B. Crompton 7/77)
This grass with 18,271.

✓ No. 18,273. *Salazaria mexicana* Torr.

✓ No. 18,274. *Linanthus aureus* Greene.

Domingo Ranch

✓ No. 18,275. *Dalea fremontii*

✓ No. 18,276. *Aster abatus* Blake

Bushes 10 to 15 in. h.

✓ No. 18,277. *Cryptantha utahensis*

Greene. Flowers in 2 rows on spike,
the rows spreading apart a little.

- Domingo ranch. So spelled in
Thompson, Desert Watering Places.

No. 18, 278. *Prunus fasciculata*
Shrubs 5 to 8 ft. high, 6 to
10 ft. broad.

No. 18, 279. *Senecio stegius Greene*
Stream bottom; ^{Rocky or} gravel bed.

No. 18, 280. *Gilia pungens Bth.*

This gilioid grows in rocky
stream beds or rocky bars; bush 2 ft.
h., 3 ft. broad. = *Leptodactylon pungens* Jeps.
var. *gileum* Jeps.

No. 18, 281. *Notholaena Jonesii* Maxon.

This tiny fern in rock crevices
of vertical rocky cliffs, in the darkest
places; south wall of cañon.

No. 18, 282. *Anemone tuberosa* Rydb.

Sepals 8, 9. Stream
bottom in protection of bushes under
cliff on s. side.

No. 18, 283. *Poa scabrella* (Thurb.) Benth. ex
Vasey (Det. B. Crumpton - 7/77)

This grass with 12, 282

No. 18, 284. *Pentstemon*

Bush $3\frac{1}{2}$ ft. h.,
5 to 6 ft. broad. Rocky Cañon Bottom.

No. 18, 285. *Gilia* ^{*ophthalmoides* Brand} ~~*macrocarpa* Benth.~~
~~*macrocarpa* =~~ *G. ochroleuca* Jones. (Bottoms.
Sandy, gravelly soil, cañon)

No. 18, 286. *Notholaena Parryi* D.C. 52.
This fern in rock clefts.

No. 18, 287. *Mirabilis*

Decumbent, forming rough
mats on cañon floor 1 to 4 ft. wide.
For description of flower see p. 128.

No. 18, 288. *Phacelia campanularia*
Gray. Cor. blue, very showy. The

herbage is said to poison the skin
with effects similar to ^(of some persons) Poison Oak.
Called "Blue Bells" by the people.

Sandy bottoms, mostly in protection
of bushes.

No. 18, 289. *Galium*

Rocky wall.

No. 18, 290. *Phacelia distans* Bth.

Sandy bottom, protection
of bushes. = *P. vallis-mortae* Vasey.

- "No. 18,291. *Salvia* ~~canadensis~~ ^{Dorril ssp. argentea} Dougl.
albino. See descrip-
tion, p. 129.
- "No. 18,292. *Oenothera caespitosa*
Nutt. Stream bottom, in gravelly
spots. Also noted in crevice of
rocky ledges.

"No. 18,293. *Ausimckia tessellata*
Gray.

"No. 18,294. *Chaenactis*.
Heads close in dark.

"No. 18,295. *Syntherisma* ~~puffii~~

- For photo of the "village" or town of
Bonanza King, of Mary Beal in litt.
June 1, 1937; Jepson Correspondence.

- Traveled easterly on Essex road (from
Mitchell's Caverns) and took road
north to Mid Hills. In about 2 miles
stop on the ^{sandy} plain and collect
the following:
- "No. 18,296. *Oxythraea*

"No. 18,297. *Franseria dumosa*
Gray ex Torr. 8 to 13 in. high; common.

"No. 18,298. *Eriogonum reniforme*
Torr. & Gray.

"No. 18,299.

This willy little composite
lies flat on the ground.

"No. 18,300. *Linanthus* ^{aureus var.} ~~decomus~~ (Gray).

Cor. white with dark
purple throat. Not *L. beakianus* Jepson.

"No. 18,301. *Langloisia schottii* (Torr.)
^{Greene}

Cor. buckskin color. Plants
decumbent.

- *No. 18,302. *Lesquerella palmeri* Wats.
Plants decumbent; corolla

yellow.

- *No. 18,303. *Chaenactis*

Half the heads on the spm. are
pink, half white!!

- *No. 18,304. *Stephanomeria exigua*

This cichorioid with white

fls. is infrequent.

- *No. 18,305. *Chaenactis*

- *No. 18,306. *Cryptantha circumscissa* Jtn.
Decumbent.

- *No. 18,307. *Astragalus*

Prostrate

- *No. 18,308. *Dysodia corperi*

Rare.

- *No. 18,309. *Hymenoclea salsola*

With 18,311. 20 to 30. in. h.

* Domingos ranch is $2\frac{1}{2}$ mi. east of
from Bonanza King Mine. See map of
with "Desert Watering Places" (Thompson).
Cont. p. 171 seq.

- *No. 18,310. *Encelia*

- *No. 18,311. *Euphorbia albomarginata* T. & G.
Prostrate in washes.

- *No. 18,312. *Eriogonum pusillum* Torr. & Gray
Wash.

- *No. 18,313. *Phacelia distans* Bth.

- *No. 18,314. *Eriogonum nidularium* Cov.
Sandy-gravelly hills.

- *No. 18,315. *Plantago*
With 18,314.

- *No. 18,316. *Eriogonum fasciculatum*
var. *poliferum* Low hills, $1\frac{1}{4}$ to $1\frac{1}{2}$ ft.

- *No. 18,317. *Langloisia punctata* Hel.
Lilac Sunbunets; rare in wash.

- * *Salvia columbiana* Bth. Common ^{on} the
flat from the Essex road north to
Beacon Peak.* Here it is on these desert
plains, ^{of the arid eastern Mohave,} exactly like the plant I
knew as a lad in the Yucca
* see note p. 171.

foothills, a country of totally different climate. And yet its range of tolerance is such that it is able to accommodate itself to these extremes and ^{to} all the country between.

"No. 18, 318. *Ischaemolobos mexicana*
Orange center to ^{Greene} cor. or
with 4 distinct orange spots.

"No. 18, 319. *Pectocarya retosa* Gray.

"No. 18, 319a. *Eriogonum* ^{Dry gravelly flats.}
~~maculatum~~

"No. 18, 320. *Cryptantha circumscissa*
Rydb. Protection of bushes in the

"No. 18, 320a. *Cryptantha decipiens* ^[Rydb.]
Greene.

"No. 18, 321. *Cryptantha pterocarya*
Greene. ^{on gravelly flats.}

"No. 18, 322. *Haplopappus*
~~linearifolius~~
var. *interior*
(Cov.) Jones Localized on the mesas

and lower hill slopes, frequent, but not dominant over large areas; a secondary or tertiary species over 2

or 3 or several acres.

"No. 18, 323. *Lycium cooperi* Gray.

Shrubs 3-4 ft. h., flowering profusely. Cor. lobes recurved from the sides in the manner peculiar to the species. Sandy mesa.

"No. 18, 324. *Plagiobothrys arizonicus* (Gray) ^{Greene}
Leaf-margins (and mid-ribs) characteristically ^{margined with a} purple line.

Sandy mesa.

"No. 18, 325. *Lotus rigidus* (Benth.) ^{Greene}
Sandy mesa.

"No. 18, 326.

This tiny composite in sandy opens between the bushes on the mesa is just coming into fl. The first head is flowering near the ground. From beneath this head prolific flowering branches will develop in the case of many individuals are now developing in sand.

✓ No. 18,327. *Layia glandulosa* (Woods) ~~id.~~

Localized; frequent. Sandy mesa.

✓ No. 18,328. *Linanthus aureus* Greene.

Cor. yellow, with orange eye. Sandy
mesa. Luminous See p. 142, 143.

- To the right of Hole-in-the-Wall
is a very imposing lofty flat-topped
mountain. We pass over a high
open mesa for several miles after
leaving Hole-in-the-Wall, climbing
on a gentle slope and descend
abruptly a few rods into the
wash of Black Cañon. This wash
is filled for miles with the silvery
gray of *Astragalus tridentatus*,
its empty whitened pedicels of
last year, lifeless and bleached,
standing above the foliage.

✓ No. 18,329. *Oenothera airta* (Klein)

Klein ssp. *airta* At point on road to Cima
where the fork turns easterly to
Government Holes.*

- We drive on out of Black Cañon
(see p. 140) into the Mid Hills to
road sign described on p. 145. Thence
on into Cedar Cañon where the
vegetation is on granite sand and
granite rocks.

* Prostrate plant at the tips of the rad-
iating branches ascending; a single
fl. in center in anthesis, white; upper
leaves markedly undulate!!
Only half of plant taken.

- *Artemisia tridentata* Spread widely as a dominant over the plateau country between Cedar Cañon and Black Cañon, forming a gray cloak over the country from which rises the crowns of *Juniperus utahensis*, forming an open dark green forest that gives a strange new character to these highlands after one has risen out of the lower desert levels. The *Juniper* is 10 to 16 feet high on the average (cf. no. 18,329 a).

- *Linanthus aureus* Greene.

Same as no. 18,328, at Hole-in-the-Wall; yellow corolla.

- *Thamnosma montana*

- *Verbena* (same as no. 18,244 at Gibby Cañon).

- *Linanthus aureus* Greene.

This small plant with the golden yellow flowers carpets the warmer granite sand between the *Artemisia tridentata* bushes and *Eriogonum* (#18,322) bushes, yellowing the flats and slopes in Cedar Cañon.

- *Yucca arborescens*.

- *Juniperus utahensis*

- Tree 19 ft. h., 2 ft. 2 in. diam. at 1 ft. Round headed and old.

- Tree 20 ft. h., round headed, old; trunk looks at 50 yrs as if 3 ft. diam. Many old trees with tortuosity or broken

crowns occur.

✓ No. 18,329 a. *Juniperus utahensis* ^{*osteosperma* (Tom) Little}

See above.

No. 18,338. *Cryptantha circum-*
scissa Jtn. *Greeneocharis circumscissoides*

No. 18,339. *Astragalus cimeae* Jones

Prostrate quite. only 2 plants seen.

No. 18,340. *Phlox stansburyi* H. & L.
Cor. pink.

Hole-in-the-Wall, Providence Mts.,
May 9, 1937.

No. 18,341. *Linanthus dichotomus*
Bth.

No. 18,342. *Plantago*

No. 18,343. *Phacelia distans* Bth.
Protection of bushes

No. 18,344. *Coleogyne ramosissima*
Tom. In full anthesis on the
mesa, its flowers covering the whole
bush and transforming it. This
species is here the marked domi-
nant on this broad mesa, cov-
ering an area seen by fire miles

at least. No other shrub at all
competes with it in number of
individuals.

No. 18,345. *Eriogonum*

Protection of bushes.

No. 18,346. *Platystemon californicus*
Berth.
Sandy mesa.

No. 18,347. *Ericameria*

Broad flat-topped bushes 12
to 18 in. h. Rays 3, 2, 1, or none
on the same bush.

- *Scirpus gregii* Scattered in
wash. Still in winter condition!

- *Yucca mohavensis*, common on
the talus and on the debital fan.

- *Dysodia*

Miss Mary Beal makes a good deal of
material with red rays sent me from
between Carrizo and Essex.

No. 18,348. *Bromus rubens* L.
(det. B. Crampton - 7/17)
San Bernardino Co.
Very common.

No. 18,349. *Acaemtopappus*
sphaerocephalus (Haw.) Gray
This composite on flat

Below Mitchell's Caverns.

No. 18,350. *Phacelia crenulata* Torr.

Sand flats. Plain below Mitchell's Caverns.

No. 18,351. *Eschscholtzia minutiflora* Wats.
Sand flats, with 18,350.

No. 18,352. *Eriogonum trichopes*

Abundant on the broad plain for twenty miles, making a green filmy cloud on the desert level between Mitchell's Caverns and Essex. More abundant in individuals than any other species. It is not a continuous sheet but occurs in broad colonies here

Per. green, 6-stamined, the segments deltid-acute. Porter.

No. 18,352a. *Calochortus Kennedyi*

No. 18,353. *Hilaria rigida* (Thurb.) Benth. ex
scribn.

Giant Grass. Common on the

plain. Clumps 15 to 17 in. high.

No. 18,354. *Eriogonum reniforme*

Sandy plain, on Mitchell's

Caverns - Essex road, at junction of Fenner road. Not common.

No. 18,355. *Chaenactis*

On higher gravelly spots on the plain. Near junction Fenner road.

No. 18,356.

This composite rare; quite prostrate; with 18,355.

No. 18,357. *Hesperocallis undulata*

I dug down 1 ft. with a heavy pick but failed to reach bulb. Sandy spot. J.E. Mitchell says they bulbs are down 2 to 3 feet. I doubt the latter figure. With 18,354

"No. 18, 358. *Oenothera*Sandy plain near Essex.
= *Eriastrum*"No. 18, 359. *Gilia eremica* ^{fl.} *Gipsom.*

Cor. lavender blue; pro-

duced in great abundance on the plant. Corolla-lobes equal and same shape; lobes bilabiate arranged: 3 in upper lip; 2 in lower lip, these spreading right and left. Sandy plain near Essex.

"No. 18, 360. *Palafoxia*

Gravelly plain

No. 18, 361. *Festuca bromoides* L.

(Det. B. Crampton - 7/77)

Grass, sandy flat.

"No. 18, 362. *Goldenia palmeri* Gray.
Wash."No. 18, 363. *Oenothera*

Cor. white. Wash.

"No. 18, 364. *Oenothera airta* Klein
ssp. *airta* Cor. white. Prostrate.

Wash. The two folders represent the whole of one plant.

"No. 18, 365. *Datura meteloides* DC.

3 ft. h. and 5 ft. broad. Sandy flat.

"No. 18, 366. *Dalea*

Sandy plain.

Decumbent; that is, perfectly flat-topped and near ground.

"No. 18, 367. *Eriogonum inflatum*

This specimen represents an individual of which only one of the seven stems from the single top root was put in folder. The plants occur here on the rocky terrain of the plain in great abundance, 2 to 3 ft. 9 in. high. Stems from one root 3 to 11. This species is a dominant on the plain here and is everywhere common over a stretch of a broad wash 10 miles by 5 miles from Essex westerly to Danby.

"No. 18, 368. *Chorizanthe*
Abundant; gravelly plain.

- ✓ No. 18,369. *Euphorbia polycarpa* Benth.
var. *typica* intergrade to
Prostrate; glands ^{Nicotiana glauca} small;

purple with white margins. Davy.

- ✓ No. 18,370. *Erioneuron pulchellum* (HBK.)
(*Tridens pulchellus*) Tateoka
Davy. The folder represents 3

plants of this grass which
grows in very heavy or globose
tufts on the sandy plain.

- ✓ No. 18,371. *Cryptantha angustifolia*
(Torr.) Greene. Davy. Wash.*

- ✓ No. 18,372. *Eriogonum deflexum* var. *deflexum*
Wash; rare. Davy.

- ✓ No. 18,373. *Langloisia Matthewsii* (Gray) Greene
Sandy flats. Abundant. Hecht.

Was passed rather promptly at
the Plant Quarantine station at
Flagstaff. The inspector adopted the
"smoothie" very friendly tactics.
Arrived in Barstow and put up
in an auto camp cabin.

* More common on the gravelly
plain

- ✓ No. 18,374. *Eurotia lanata*

Lamb's Tail is frequent here.

- ✓ No. 18,375. *Oxytheca perfoliata* T. & G.

- ✓ No. 18,376. *Nanua demissum* Gray.

- ✓ No. 18,377. *Lepidium flavum* Torr.

- ✓ No. 18,378. *Gilia latiflora* Gray ssp. *Davyi*
(Mikn.) A. & V. Crane
Cor. lavender or blue, the

throat greenish-yellow, the tube purple

- ✓ No. 18,379. *Lupinus*

Fls. purple, the long racemes
seeming to arise from the desert
floor and thus giving a unique
aspect to the scene.

- ✓ No. 18,380. *Cryptantha circumscriba*
(H. & A.) Low round dense crowns
are like some *Eriogoni*. Here is a
form character that is marked.

- ✓ No. 18,381. *Grayia spinosa* Moq.

- "No. 18,382. *Haplopappus linearis* -
linearis ^{var.} *folius* var.
interior (Cor.) Jones
Rounded crowns resting
on ground. Infrequent here.

- "No. 18,383. *Gilia* ^{*ochroleuca* Jones ssp. *ochroleuca*}
~~*unconspicua* Dougl.~~
^{*var. cuneata* (Dougl.)}
^{*G. tenuiflora* Dougl.}
Corolla pale lavender, slightly
yellowish in lower part of throat.
Corolla very small.

- "No. 18,384. *Gilia latiflora* Gray.
^{ssp. *Davyi* (M. & N.) A. + V. Grant}
Cor. large, blue, yellowish in
throat, purple tube.

- "No. 18,385. *Eschscholtzia*
minutiflora Wats. Tiny pale yellow corollas.

- "No. 18,386. *Oenothera*
Only one individual found.

- "No. 18,387. *Ericameria*.

Bush 8-13 in. high, round
crowns resting on ground, $1\frac{1}{2}$ times
as broad as high, yellowing the
spores between the larvae tri-
dentate bushes. Abundant locally.

Rays, mostly none.
1 or

- "No. 18,388. *Cercopsis*

Making sheets of yellow on
flats, $\frac{1}{2}$ to 2 or 3 acres.

- "No. 18,389. *Mentzelia*

Cor. gold yellow, much larger
than desert species.

- "No. 18,390. *Astragalus*

Cor. greenish-yellow. De-
cumbent or prostrate with ascending
ends. Valley flat.

- "No. 18,391. *Amsinckia tessellata* Gray.

- "No. 18,392. *Gilia* ^{*brecciarum* Jones ssp.}
~~*unconspicua* Dougl.~~
^{*brecciarum*}
Cor. livid purple-blue, with

some dark red in it.

- "No. 18,393. *Vicia*

Cor. purple.

- "No. 18,394. *Lomatium*

Heavy tufts.

No. 18,395. *Solanum xanti* Gray.No. 18,396. *Astragalus*

Decumbent; 4 ft. broad.

Cor. greenish-yellow; banner notched.

Pods, cylindric though so inflated,
abruptly short acute.No. 18,397. *Erysimum*No. 18,398. *Athyrium pusillus* Greene

No. 18,399.

Compositae

No. 18,400. *Bromus arenarius* Labill.
(det. B. Crampton, 7/77)

grass.

No. 18,401. *Viola purpurea* Kell. sp. typica B&G.No. 18,401a. *Androsace*No. 18,402. *Ribes ~~guercetorum~~* Greene
2 mi below Cleon Creek sta.

Thicket 5 ft. h., 40 ft. across.

Berry red when ripe.

- Species associated with nos.
18,395 to 18,401a: =*Quercus douglasii*.*Pinus sabiniana*.*Populus fremontii**Ailanthus glandulosa* (Keene)

No. 18,403. *Mimulus guttatus* DB.

Cottonwood Creek, s. of Madara.

No. 18,404. *Rumex crispus* L.

Cottonwood Creek, s. of Madara.

No. 18,405. *Lupinus*

Covers a sandy upland field, about 200 acres, about a mile ^{and 1/2} north of Merced River on east side of road. Stems erect from a decumbent base, 5 to 40 from one root, forming with their large showy racemes of blue fls. a fine sight. Clumps 2 to 5 ft. wide.

No. 18,406. *Oenothera deltoides* Torr. &from ssp. *cognata* (Gray) Klein. Petals white, obcordate.

Stems 5 to 12, diffusely spreading, forming white spots over the field described sub 18,405.

No. 18,407. *Phacelia distans* Bth.

Central stem taken and one of the laterals from

in separate folders.

the base, laterals 5 to 8, ascending, forming a bushy plant 18 to 28 in. ^{or 33} high. With 18,405. These three species, 18,405, 18,406, 18,407 help to reproduce the primitive vegetation of these plains. ^(a picture of) There is also here the *Cucurbita* with the ovate acute leaf, *C. foetidissima*.

This field must make a wonderful botanizing ground in the spring and should be remembered. It has not, apparently, ever been cultivated. It is, as indicated on p. 158 on east side of highway, about 1 1/2 mi. north of Merced River and 2 mi. s. of Delhi. It is an area to be remembered.

No. 18,408. *Senecio brevis* Gray
steep adobe ^{n.} slope.

No. 18,409. *Astragalus*
Colony of it on flat
and lowest slopes by flat. Cr.
white.

- Rhoda Ramona Reed. Former student
Univ. Cal. + collector at San Luis Obis-
po, just called. I understood her to say
that her family is related to the old-time
families in San Luis - the Jacks and
Hollisters. The Arroyo Ranch is owned
by the Sinsheimers. - May 21, 1937.

- Robert Crichton Foster, a Ph. D. of
Professor M. L. Fernald, Harvard, called
on me, May 10, when I was away.

- Called today, Mrs. Charlotte M. Wilder, old-time botanical collector in the San Bernardino. cf. vol. 56, p. 165.
- Called today, June 16, Dr. Theo. Just of the University of Notre Dame. He was accompanied by my former student, Dr. David O. Keck.
- "With regard to any narrative that wanted dates of time and place, plausible as it might otherwise seem, he was uniformly an inexorable sceptic, and held it unworthy of repetition."
- Said of Immanuel Kant in De Quincey's Essay, paragraph 8.
- To take trouble is to sacrifice time - and time is the stuff that life is made of.

Drove today to Vaca Valley. Stopped near Cordelia and collected as follows:

- No. 18,410. *Pieris ichioides*
Adobe soil, valley flat.
- No. 18,411. *Lupinus*
Colony, valley flat.
- No. 18,412. *Lythrum hyssopifolia* L.
Bed of former vernal pool.
- No. 18,413. *Boissduvalia glabella* (Nutt.) ^{Walp.}
Bed of former vernal pool. The plants look bushy, that is as if much-branched from the base and, so, "bushy". In fact, not; there are many plants in little clumps!! This species dominates the pool bed. Perhaps the clumps come from tardily dehiscent capsules.
- No. 18,414. *Eryngium*
Pure colonies in former pool beds; abundant. The plants are, at this stage, remarkably bluish green or glaucous green.

It is very striking. The stand consists of pure colonies.

18,414a *Psilodaphnus oregonus* Nutt. Cordelia.

Grows on to the south end of the basalt hill at Thomasson and collected:

No. 18,415. *Erigeron foliosus* Nutt. *Aster menziesii* Lindl. Rays lavender; root-crown often branching widely and so stoloniferous.

On a little oak-covered hill, the base of which is margined by the salt marsh. Alt. of *Aster*, about 5 ft. above high tide!

No. 18,416. *Gnaphalium*
This is in the salt marsh.

No. 18,417. *Galium*
In rocks; with *Aster menziesii* as to locality and of the same alt. Berry dull white, or perhaps a little translucent.

No. 18,418. *Melilotus albus* Desr.
Corolla: banner orbicular, its sides conspicuously turned backwards. Wings longer than keel, shorter than banner. On account of the reflexed sides of the banner the wings and keel are completely exposed. Cor. white.
Cont. p. 167. Near Thomasson sta.

No. 18,419. *Melilotus indicus* (L.) Ait.
Cor.: banner narrow, unfolding the wings and keel at least half and thus partially concealing them. Wings of same length as keel, both shorter than banner. Cor. yellow. Cont. p. 167.
Solano Co. Near Thomasson sta.

No. 18,420. *Cichorium intybus*
Thomasson sta.

No. 18,421. *Wyethia angustifolia* Nutt.
Pigeon Point.

No. 18,422. *Potamogeton*

See p. 167. In a deep stagnant pool on south side of road in a field, - summer dry creeklet bed - near east end of Poorhouse Road, that is about 1 mile east of Folsom sta.

No. 18,423. *Elymus triticoides* Buckl.
(Det. B. Crampton 7/27)

This grass is always in colonies - often pure colonies, usually of small extent, always found on banks and sides of draws, and filling little bottoms below such banks or slopes. It is the same, I think, as at Little Oak opposite the west big trees.

- *Centaurea calcitrapa* L.

Purple Star Thistle. Fills the field in front of the dwelling at Pigeon Point. Nothing else there now. Not yet fully in flower.

The Yellow Star Thistle is

June 16, 1937.

just beginning to send up its shoots from the basal rosettes. It is a strictly dry season species and is well adapted to flourish and make its growth in the driest soil, of the rainless season.

(notwithstanding its period is of)

- *Melilotus alba* vs. *M. indica*.

Raceme denser and narrower in *M. indica* than in *M. alba*. Fls.

spreading horizontally in *M. indica*, a little decurved or deflexed or spreading downward in *M. alba*.
See nos. 18,418-9.

- This "creeklet". (see no. 18,422) is really a tiny slough and differs in character from any little creek in the valley about Little Oak which would now hold water until this time. The "Poorhouse" Road pool

is really a little cistern on account of the nature of its bottom and sides.
↑ soil

Skyline Ridge, Berkeley Hills,
Alameda Co. June 27, 1937.

"No. 18,424. *Holodiscus discolor* var. *franciscanus* (Rydb.) Jep.
This year is a fine year for

it. Its colonies form enchanting cascades on cañon walls.

"No. 18,425. *Lonicera cuspidata*
Cañon slope.

"No. 18,426. *Lupinus*

Multiplying vegetatively, stem-wise, from a deep-seated root. Cañon slope. Banner dull bluish, wings purple, keel whitish.

"No. 18,427. *Sitanion jubatum* J.G. Smith
(det. B. Crumley, 7/32)

This grass grows in one heavy broad stool (all seen).

Perennial as evidenced by old stems but also by heavy compact rootstocks, not hard tissue but

spongy tissue.

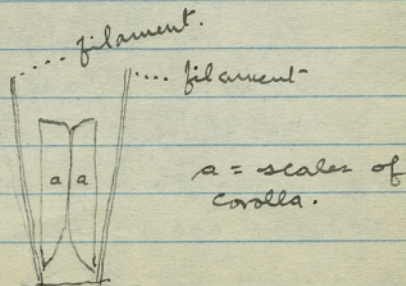
"No. 18,428. *Centaurea melitensis*
Open hill slopes.

"No. 18,429. *Diplazium*
Coloring grandly the cañon walls this season.

"No. 18,430. *Castilleja wightii* Elmer

Calyx: lateral lobes shortly cleft; calyx whitish or straw-color; corolla slightly exserted, membranous or whitish, the galea midrib greenish and running down to tube. Anthers salmon-color. Stigma dark or purplish.

"No. 18,431. *Phacelia californica*
Bham.



- see over -

Alameda Co.

style cleft to about middle, slightly pubescent below the cleft. Ovary densely hairy with erect straight hairs. white. Cor. + lavender.

Stamens much exserted, bearing a few long hairs at the middle.

No. 18, 432. *Agrostis hallii* Vasey
(det. B. Crampton, 7/77)
Perennial grass in clumps.

No. 18, 433. *Lupinus*

Same as 18, 426. The lower branches from the top root are now cut off, the stubs as showing on specimen, representing them. Discarded Aug 1935

No. 18, 434. *Cirsium Carduus*
Skyline Ridge near the new water tank.

No. 18, 435. *Wyethia angustifolia* Nutt. Forming colonies 2 to 6 feet across. Achenes with 2 subulate awns - one short, one long.

June 27, 1937.

No. 18, 436. *Agrostis hallii* Vasey
(det. B. Crampton, 7/77)
Perennial grass. Compact stools.

No. 18, 437. *Monardella villosa* Bth.
Forming clumps.

No. 18, 438. *Pteris aquilina*
Pteridium aquilinum (L.) Kuhn var.
pubescens Underw.

No. 18, 439. *Elymus glaucus* Buckl.
(det. B. Crampton, 7/77)
Perennial grass in colonies.

No. 18, 440.

Inboid on clay slopes.

Cont. from p. 136. * See travel note on p. 135. We travel north on this road (towards Mid Hills) and stop to collect on the flat about opposite a well-marked peak in the little range between Domingos ranch (or Domingos Valley) and the Cima-Tranner road (lying to east of our present point, but that road marked on "Desert Watering Places" map.) This peak has a marker on top (a pole or triangle placed there doubtless by surveyors) and we got the idea it was Beacon Hill or Signal Hill but erroneously acc. to Mitchell at Mitchell's canyon.

Drive to Little Oak. Mission Figo only partially ripe. First ripe wave of the Royal Apricots fairly ripe, some dead ripe.

✓ No. 18,440a.

This grass forms a pure colony forty feet long and ten or twelve feet wide in a shallow ditch on opposite side of the county road from the west fig tree at Little Oak.

I notice occasional colonies of this species scattered about the country side a mile or more apart.

✓ No. 18,441. *Helianthus annuus*
Chandler field, between Little Oak and Pigeon Point.

This is abundant in the field, covering about 50 acres, just as it did fifty years ago.

✓ No. 18,442. *Carrum Kelloggii*
Flat by Chandler field, near Pigeon Point, s. of Little Oak, Vacaville.

✓ No. 18,443. *Cuscuta*
on *Rhus diversiloba* T. & G.
Suissun Creek near sta.,

not far from n. end Basalt Hill.

✓ No. 18,444. *Acer macrophyllum*
Pursh. Tree 3 ft. diam. trunk at 2 ft. 40 ft. h., 45 ft. diam. of crown. A fine tree with broad rounded crown.
Suissun Creek, on bank, with 18,443.
No. 18,445.

This grass forms an extensive pure stand in a swale $\frac{1}{2}$ mi. west of Crockett, Carquinez Straits. The stand is found both above and below the road and covers about 15 acres.

✓ No. 18,446. *Scrophularia californica* Cham.

With no. 18,443.

"No. 18,447.

This grass grows in a
swale $\frac{1}{2}$ mi. w. of Crockett."No. 18,448. *Lathyrus*On hill slope $\frac{1}{2}$ mi. w.
of Crockett.— Snisun Creek. At the point where
I cross it, near sta., it is
a deep ditch with steep sides and
no bed for sand or gravel bars.The banks support a dense screen
of trees, very much denser than
case of the creeks in Napa Valley.
This screen is of willows and *Acer*
macrophyllum; further up creek there
appeared to be many Live Oaks, prob.
Quercus wislizenii"No. 18,449. * *Nicotiana attenuata* Torr.
3-4 ft. h. Corolla limb about
 $\frac{3}{4}$ in. broad. Lower slope of Howell
Mt. about 1 mi. above Sanitarium."No. 18,450. *Cirsium*

With 18,449.

"No. 18,451. *Elymus ericoides* Buckl.
(Det. B. Crampton, 7/27)This grass forms dense
pure colonies in formerly wet ground
on valley level near Oakville, Napa
Valley.
Colonies about 40 x 150 feet."No. 18,452. *Carex*Same locality as 18,451,
forming colonies in lower spots.— I have been a week at the
Sanitarium; leaving today.— * This number, 18,449 = *Nicotiana*
acuminata Hook."No. 18,453. *Stipa californica* Merr. + Davy
(Det. B. Crampton, 7/27)
Grass, Dunsuir. See p. 176.

Left Berkeley Thursday, July 22 at 1.00 pm., bound for Pullman, Wash. Near Corvallis the wheel below the foun carrying the belt snapped with a loud crack. It took us one hour to make repair at Fairfield. Went on to Little Rock and got a supply of peaches and figs, went on via Winters to Red Bluff where all night in Shady Hook auto camp. Next morning at 8:00 towards Mt. Shasta. (see bottom p. 175)

- *Cercis occidentalis* abn. Mears Creek.
- ate dinner at Yreka Inn, Yreka.

"No. 18,454. *Eriogonum viginum*

Fine gravelly clay. Near Hamath River bridge beyond (N.) of Yreka

- *Mentzelia laevicaulis* on rock-serpentine cliff!! Also noted on dry grassy flat.

"No. 18,455. *Lupinus*
corolla meplum-yellow, dry flat beyond Hornbrook, Cedar Grove road sta.

"No. 18,456. *Polygonum*
with 18,454.

- Passed over the Siskiyou (the pass very low. Down through heavy timber to junction Ashland Road, then east on the Cascade Mts. Heavily timbered; at first *Pseudotsuga taxifolia* and *Pinus ponderosa*, the former predominating, gradually eastward supplanted by the latter and then *Abies concolor* comes in, but not abundantly. On Hayden Mt. I collect

the following:

"No. 18,457. *Sidalcea*

"No. 18,458. *Gayophytum*

"No. 18,459. *Danthonia californica* Boland.
(det. B. Crampton, 7/27)

"No. 18,460. *Eriophyllum*

"No. 18,461. *Scutellaria*

"No. 18,462. *Antennaria*

Grass.

I go on east, down, down, to Klamath Falls, near which I pass through a thunder-show. Stop over night at Hotel King (large airy clean room \$1.50). Get an excellent breakfast at Hush-Bergers Cafe: oats and cream, bacon and eggs and toast and butter and milk.

This is a bustling town with large lumber mills - bustling, growing busily, crude, even raw.

I drive north along the shores of Klamath Lake toward Bend.

"Camp 2".

Within about one mile of the junction where the Crater-Lake-Diamond Lake road comes into main Klamath Falls-Bend road ^{on a sandy flat} I collect.

"No. 18,463. *Senecio carus* Hook.

"No. 18,464. *Antennaria*

"No. 18,465. *Gnaphalium*

"No. 18,466. *Lupinus*

About 2 mi. s. of Lapine I collect:
"No. 18,467. *Mimulus ~~canescens~~ ^{var. ~~canescens~~}*

Cor. crimson, upper lip with longer and longer lobes than lower.

Lower lip: lobes notched! The lateral with purple narrow longitudinal band below middle; middle lobe with 3 such bands, merged below and with 2 linear yellow streaks,

really transverse yellow dots on the ridges of lateral purple streaks, the middle purple streak between the folds. Lower lip inside with a scattered stand of erect hairs.

"No. 18,468. *Mimulus*

Bend, 8 mi. s.

"No. 18,469. *Eriophyllum*

With 18,468.

"No. 18,470. *Nanella ^{sp.} densum* Lemmon.

With 18,468.

"No. 18,471. *Aster ~~canescens~~ ^{sp.} Machaeranthera*

canescens (Pursh) Gray With 18,468.

"no. 18,472. *Chaenactis*

Madras.

"no. 18,473. *Allium*

Tygh Ridge.

"no. 18,474. *Lagophylla ramosissima* Nutt.

Tygh Ridge.

"no. 18,475. *Eriogonum strictum* ssp.

proliferum var. *proliferum* Heavy stools. Tygh Ridge.

"no. 18,476. *Lomatium*

Tygh Ridge.

"no. 18,477. *Eriogonum heracleoides*
var. *angustifolium*

Tygh ridge. Heavy stools

"no. 18,478. *Eriogonum strictum* ssp.
proliferum var. *proliferum*

Tygh ridge. Heavy stools.

"no. 18,479. *Sanguisorba*

Tygh Ridge.

- From Klamath Falls n. to Bend through forest of *Pinus contorta* murrayana over plateau level. The high alpine country of the Three Sisters shows finisly to west.

around Culver, Metolus and especially Madras, open country, rolling terrain broken more and more by great river cañons cutting across the general level, all the way to the Dalles. Near Sufer oaks come in (*Quercus garryana*).

- At The Dalles I go into an auto camp for a bedroom. Next morning, Sunday, July 25, I drive up the Columbia River highway. It is a wonderful experience. I have seen it before but not in this way. The great lava cliffs and huge mountain peaks that succeed each other are very wonderful.

* - *Silantius glaucochrous* ; run wild about The Dalles.

* - The botanizing is interesting all along the Columbia but I do not stop, since I am coming back this way and I have a date at Pullman.

I travel up the Columbia River to the highly impressive mountain gateways at Walula and there turn away from the river to Walla Walla. I cross the mighty Snake River. Have a flat tire soon which is very tough work in the hot sun; the iron or steel tools becoming so hot that one cannot touch them. Even ^{in the sun} the road pavement is too hot to hold one's hand against it. At Walla-Walla I get two new tires and proceed towards Pullman by way of Belfax over a high rolling country cut by stream valleys or hollows. It is like the Montezuma Hills in my own home country a little but on a gigantic scale. Every where there is wheat and one wheat; wheat on hill slopes so steep I wonder that a reaper

or harvester could get over them. Prosperous farms on the whole. In the Manpin (Ore.) country I was much impressed by the fine lofty trees of *Robinia pseudacacia* about farmsteads. It is also a feature of this country. Also in both regions the Lombardy poplar is a marked feature about some farms.

I arrive at Pullman about seven-thirty. The college buildings of the Washington State College are finely situated on a high hill overlooking the city.

I stop the night at The Washington Hotel; next day I spend with my former student Dr. ^(cf. p. 17 ante) Lincoln Constance, and the next day start at 6.00 am. for California.

- "No. 18,480. *Lepidium* ^{Washington} ~~perfoliatum~~ ^{h.}
Central Ferry School, ~~Colfax~~.

Snake River bridge

- "No. 18,481. *Artemisia ludoviciana* Nutt.
Stems many from base, erect;
gulch bottom; Central Ferry School, Snake
River.

- "No. 18,482. *Artemisia ludoviciana* Nutt.
Stems many from base, erect;
gulch bottom. Central Ferry School,
Snake River bridge

- "No. 18,483. *Rosa*
Gulch near Dayton.

- "No. 18,484. *Tanacetum vulgare* L.
Common composite on
valley bottoms. Dayton

- "No. 18,485. *Oenothera ligusticifolia* Nutt.
With 18,484.

- "No. 18,486. *Centromadia*
Valley flat. Walla Walla

- "No. 18,487. *Sarcobatus vermiculatus*
Bushes 4-5 ft. h.
Valley flat, Walla Walla.

- "No. 18,488. *Clome lutea*
This species is common
between Arlington (where collected)
and Wullila; that is common in
scattered spots.

- "No. 18,489. *Abronia*
Per. white. Near Arlington.

- "No. 18,490. *Chrysopsis*
Melamoose Point, e. of
Hood River.

- "No. 18,491. *Pentstemon*
Betw. Melamoose Pt.
and Hood River. Talus slope.

- "No. 18,492. *Quercus garryana*
Dougl.
Melamoose Pt.

- Drove in to the suburbs of East
Portland; thence s. to Oregon City
where I had luncheon and
noted the paper mills. On s. to
Salem, the state capitol, and to Cor-
vallis where is the Oregon State

College. I look up Dr. Helen M. Gieky at her home. She asks me to stay to dinner and has in Dr. and Mrs.

Rogers (fungi) to meet me. He was trained at Iowa State and later at Harvard (Harlow Herbarium and Library). Later Professor and Mrs. B. E. Owens came in. He is chairman of the Dept. of Botany. Some remark caused me to speak of the importance of the Rogue River as a dividing line for northern and southern floras. We also talked about the relation of west American flora and southwestern Europe, and of east Asiatic and east American floras. Dr. Rogers said that in fungi certain specialists working on Chinese fungi had been able to use East American monographs to advantage, more than any other.

papers. Likewise that European mist papers were of advantage in western America.

The campus of the Oregon State College is quite fine — a good looking set of buildings with a consistent atmosphere.

Multnomah Falls, Columbia River,
July 28, 1937.

No. 18, 493. *Sedum*

Mossy Banks,

No. 18, 494.

Roadside composite.

No. 18, 495. *Pentstemon*

Talus slope.

No. 18, 496. *Phacelia griseophylla* (Gray)

A sordid spot on slat in the tube of the dull white corolla below each lobe.

No. 18, 497. *Campanula*

Cor. blue.

"No. 18,498. *Eschscholtzia californica* Cham.
Philomath, Benton Co.

"No. 18,499. *Godetia*
Philomath, Benton Co.

"No. 18,500. *Gaultheria shallon* Ph.
Alsea, Benton Co.

"No. 18,501. *Spergularia*
Alsea, Benton Co. Prostrate

"No. 18,502. *Grindelia*
Waldport, Lincoln Co.

No. 18,503. *Crepis capillaris*
Roadside composite. Waldport, Lincoln Co.

"No. 18,504. *Arctostaphylos wa-wai*
Waldport, Lincoln Co.

"No. 18,505. *Gaultheria shallon* Ph.
Yachats River. On sand-dune beach
by ocean shore; 8-12 in. high.

"No. 18,506. *Achillea*
Yachats River. Beach dune.

"No. 18,507. *Galium*
Yachats River, Lincoln Co.

"No. 18,508. *Senecio sylvaticus* L.
Woods, Yachats River,

Lincoln Co.

"No. 18,509. *Vaccinium ovatum* Ph.

Forming extensive colonies
on the beaches and seaward head-
lands near Big Creek, Lane Co.
The colonies are a striking feature
of the landscape, the larger
bushes being conspicuously wind-
controlled, the summit sloping
gradually upward from the ground
on the seaward side to the
summit on the seaward side,
the bushes 1 to 3 feet high.

road
- The coast ^{road} from Waldport to Florence
is very picturesque and varied.
South of Waldport *Picea sitchensis*
forms pure forests, coming down onto
the beaches as wind-controlled
dwarfs, forming low or rounded
mounds.

July 29, 1937.

Stopped last night in an auto camp near Florence; ran south; got a mid-day meal at Marshfield, a very rough lumber town, on south to Gold Beach where I stopped to look at *Pinus contorta* (see no. 18,512).

Calendar

- Florence, Ore. to Smith River, July 29
- Poker Flat, Del Norte Co., July 30.
- Crescent City and Van Derwater, July 31.
- Van Derwater ^{ranch}, Aug. 1.
- Crescent City, Aug. 2.

- George L. Maxley, Lovano Route,
Cottage Grove, Oregon.

July 29, '37.

- The following is an extract from a letter written to Dr. Helen M. Gilkey, Oregon State College, dated 8-14-37, ^{Crescent City} Crescent City.
- from a strictly scientific standpoint there is no question that an herbarium is the most important physical asset of a department of botany in most colleges. Its importance in a long-distance view cannot be questioned. There has never been done on a species or a group that ^(any piece of work) botanists do not need to go back to the original material - the more important or significant the work the greater the need. Indeed the value of a monograph may become problematical unless it is possible to re-identify or confirm species. I lament, therefore, that the herbarium at the Oregon State College receives so little support. It is an unwise policy and should be changed. - W. L. J., Crescent City.

Florence, Oregon, to Smith River,
Del Norte Co., Cal., July 29, '37.

"No. 18,510. *Cytisus scoparius* Link.

Abundant 4 mi. s. of Florence.

"No. 18,511. *Cardiomena ramosissima* (Lewin.)
^{rel. mscr.}

This dicotyledonous plant is on the

beaches near Florence.

"No. 18,512. *Pinus contorta* Dougl. ex Lindl.

Gold Beach. Trees 70 to
100 feet high, 1 to 1 1/2 feet in
diameter.

Headwaters of the Illinois River,
East Fork, Siskiyou Co., Calif.

July 30, 1937.

Dunn Creek, or fork of it.

"No. 18,513. *Lilium wigginsii* Greene & Vollmer

"No. 18,514. *Corallorhiza maculata*
no. 18,514a " *striata*

"No. 18,515. *Stachys rigida* Nutt.

"No. 18,516. *Tolmiea menziesii* (Pursh) ^{Tiff.}
This saxifrage plant is in a moist bottom.

Headwaters Illinois River, East Fork,
Del Norte Co., Calif., July 30, 1937.
on tributaries of Dunn Creek, Del Norte Co.

of the cañon

"No. 18,517. *Trifolium howellii* Wats

"No. 18,518. *Asarum caudatum*
Lindl.

"No. 18,519. *Aconitum*
(Discarded. Specimen very immature)

"No. 18,520. *Mimulus moschatus*
Dougl.

"No. 18,521. Not used.

"No. 18,522. *Heuchera*
Saxifrage plant in cañon bottom.

"No. 18,523. *Senecio triangularis* Hook.

"No. 18,524. *Adenocaulon bicolor*

-Made a trip into the Siskiyou Mts.,
with Mr. and Mrs. A. F. Vandermyer, of
Smith River, via. Waldo, Ore., and over
Happy Camp road to Poken Flats just
over summit.

Dunn Creek, * East Fork Illinois
River, Siskiyou Mts., 4000 ft. **
Del Norte Co., July 30, 1937.

No. 18,525. *Pyrola picta* Smith.

Cor. greenish-white.

No. 18,526. *Campanula*

No. 18,527. *Cephalanthera*
austriacae

No. 18,528. *Chimaphila umbellata*
Nutt.

No. 18,529. *Campanula*

No. 18,530. *Symphoricarpos*

No. 18,531. *Symphoricarpos*

No. 18,532. *Pyrola secunda* L.

Summit Siskiyou Mts., near
Poker Flat*, July 30, 1937; 5100
ft.

No. 18,533. *Crepis acuminata*?

No. 18,534. *Rumex*

No. 18,535. *Collinsia grandiflora*
Dougl.

No. 18,536. *Erigeron aliceae* Howell
Rays very pale lavender.

No. 18,537. *Pentstemon*.

No. 18,538. *Monardella odoratissima*
Bth. ~~ssp. pallida~~
~~var. ovata~~ (Greene) Jepson.

No. 18,539. *Polygonum*

No. 18,540. *Collinsia rattanii* Gray.

* Poker Flat, in Siskiyou Co., Siskiyou Mts., within a few hundred yards of Del Norte Co. line.

* tributary of. Del Norte Co. (Sept. 1937)

** In region of Lucky Strike Mine, says A. F. V.

- "No. 18,541. *Quercus sadleriana*
 R. Br. Camp. (1 1/2 mi. n. of Poker Flat.)
 "No. 18,542. *Eriogonum umbellatum*
 var. *umbellatum*
 "No. 18,543. *Schoenolirion album* Dur.
 "No. 18,544. *Ribes* ~~*trochilii*~~ var.
cruentum (Greene) Rehd.
 "No. 18,545. *Eriogonum compositum*
 var. *lanceifolium*
 "No. 18,546. *Anemone deltoidea* Hook.
 "No. 18,547. *Clintonia uniflora* Kunth.
 "No. 18,548. *Lonicera*
 "No. 18,549. *Epilobium*
 "No. 18,550. *Potentilla gracilis* Dougl.
 "No. 18,551. *Sidalcea*

- "No. 18,552. *Mimulus rubellus* Gray
 var. *breviflorus* (Greene) Jepson.
 "No. 18,553. *Galium*
 "No. 18,554. *Potentilla glandulosa*
 Lindl.
 "No. 18,555. *Agastache urticifolia*
 (Asth.) Ktze.
 "No. 18,556. *Sidalcea*
 "No. 18,557. *Mimulus guttatus* DC.
 "No. 18,558. *Delphinium glaucum* Wats.
 "No. 18,559. *Pentstemon laevis* Gray
 var. *sagittatus* (Nutt.) Jepson.
 "No. 18,560. *Cortilleia elata* Piper
 "No. 18,561. *Senecio triangularis* Hook.
 "No. 18,562. *Phacelia procera* Gray.
 Cor. greenish, its

lobes recurved. Ovary and undivided
portion of style with gland-tipped
hairs.

No. 18,563. *Fragaria*

No. 18,564. *Leptotaenia*

No. 18,565. *Polygonum phytolaccaefolium*.

No. 18,566. *Gilia aggregata* Spr.

No. 18,567. *Aster Erigeron aliciae* Howell

No. 18,568. *Anemone deltoidea* Hook.

- Continued from top of page 203:

Callitriche longipedunculata ~~longica~~ ~~marginata~~ No. 18,572a

No. 18,569. *Melilotus albus* Desr.

^{Napa}
Common along river and certain roadways.

No. 18,570. *Madia elegans* Lindl.

Dry flats. Rays yellow, $4\frac{1}{2}$ lines long,
yellow, rather deeply cleft at apex.

No. 18,571. *Eriogonum nudum* Bth.
var. *pauciflorum*

Dry hillsides.

No. 18,572. *Centaurea solstitialis*

Dry flats and fields - in valley.

No. 18,573. *Pentstemon lemmonii*

Gray. Bush, 3 ft. h. Glass Mt.

No. 18,574. *Heterotheca grandiflora*

^{Napa}
Bridge over River on road to San-
itarium; on dry flats and on sand-
stone cliffs! 2-5 ft. h! I do not
remember this as in Napa Valley of
old time.

No. 18,575. *Erigeron inornatus* var.
biolacci (Greene) Jeps. Glass Mt.

No. 18,576.

Composite. Open woods, Glass Mt.

Berkeley, Dec. 25, 1937.

- At the Christmas dinner, home* of Professor E. Fritz, Division of Forestry, College of Agriculture, there was present Geo. W. Cornwall, editor of the Pacific Timberman, who said: "At Nootka, Vancouver Island, logs come in from all parts of the Pacific Ocean. It is a center head for ocean currents. There we get teak logs from Burma, bamboo from China, mahogany from the Philippines and Redwood from California."

Redwood logs are also washed up on the beaches of Del Norte and Humboldt counties in quantity.

* 102 The Uplands, Claremont.

Berkeley.

No. 18,577. *Botula australis*

Corner Denia St. and Bancroft Way, Berkeley, on the old lawn of the Unitarian Church, this species covers one or two rods with a dense growth, quite pure and extremely even. Feb. 7, 1938.

High Gale, Berkeley

On Dec. 9, 1938, a high gale of wind moved across the Bay region, attaining 100* miles at San Francisco acc. to Weather Bureau records. On the Berkeley campus it took down branches of trees and leafage on a considerable scale. One oak (*Quercus agrifolia*) fell, the tree nearest the sw. entrance to the Life Sciences Bldg., just across the walk. An old tree, thoroughly rotted through at the root crown, but not one of the largest trees.

* See over

- Cont. from over. * So said the newspaper. The Weather Bureau, I am told, gave out 80. cont. pag. 256

- Drove to Vacaville, Sunday morning early, April 3. Went to Little Oak Ranch first, then to Max Brazelton's house, then to Neat Tate's house. He and I climbed the hill just south of Loggorn Pass, which Tate calls Burton Hill, a modern name. The northeast ^{sparsely wooded} slope is now showing ^{steep} some annuals in flower, amongst which I collect:

No. 18,578. *Collinsia sparsiflora* G. & S. M. var. *collina* Newson.

At the top of the hill on the bare westerly summit is a broad colony of *Nicola pedunculata*, now in full flower. The view from this point is widespread and very agreeable to the eye in this time of orchard bloom. See p. 224.

- In late afternoon drove to Sacramento, stopped all night at the Hotel Berry. Went on next morning to Colusa and took Grass Valley road, which after Spenceville became very rough, narrow and rocky - due mainly to winter storms. Came into the Marysville - Grass Valley highway just below Rough and Ready. Went on into Grass Valley and thence to Auburn. All this time a heavy rain storm going and I was misdirected out of Auburn, came back to Auburn and stopped the night at the Hotel Auburn. Took meals at the Sather Grill and the Koffe Kup restaurant, both all right, but the latter the better. Had brakes on car fixed at Janssens Garage. After two missteps, short ones, found road to Colusa. In about two miles stopped and collected:

No. 18,579. *Pellaea mucronata* (D.C. Eaton) D.C. Eaton
 var. *mucronata* This fern grew by a

small rock outcrop in good red soil.

No. 18,580. *Pityrogramma triangularis* (Kaulf.)
 Maxon var. *triangularis*
 This fern with 18,579.

No. 18,581. *Cerastium* ~~*viscosum* h.~~
~~*viscosum* h.~~

Loam soil, hillside

No. 18,581a. *Styrax officinalis* L.

Hill slope. In young leaf, with
 young brown sides.

No. 18,582. *Eriophyllum*

Plainly an annual

No. 18,583. *Leptocarpus stellumii*

No. 18,583a. Liverwort. *Hepati*

No. 18,584. *Minulus* (Eumans)

Kelloggii Curran. Corolla purple, curved
 forward above the tube; that is the
 throat limb curved forward, so
 that the upper lip is ^{and} not quite erect but
 slightly over the throat and lower lip. Corolla
 lips very unequal, the 3 lobes of
 the lower lip short. Cor. - throat

yellow with white border and purple
 dots. Two small yellow parallel bands in
 upper throat below middle lobe of lower
 lip. Small but deep purple spot in
 throat below each of the other lobes.
 Anthers approximate in pairs on
 upper side of the corolla, each
 set forming a sort of 4-rayed
 star. The stigma-lobes are extremely
 unequal, the upper being short,
 the lower eventually curled down
 over the upper pair of anthers
 with the stigmatic portion up. -
 Gravelly red soil of openly
 wooded steep hill slopes.

- Drove on down to Bridge (suspension)
 over North Fork American River; about
 1/8 mile up grade stopped by rivulet
 and collected:

No. 18,585. *Claytonia perfoliata*
~~*Montia*~~ ^{down} ex Willd.

Petals magenta - pink.

Auburn (3 mi. e., near North Fork American R. Bridge).

No. 18,586. *Ranunculus* ^{us Gray} *hystrioides* Greene.

On face of moist rocks. Cor.

white, rotate. Five ^{to seven} green narrowly ovate or oblong glands raised on stipe-like base, erect, set outside the zone of stamens. Stamens elongating during dehiscence. Styles turned downward at apex (hooked). Glands turn yellowish in age.

No. 18,587. *Saxifraga californica* ^v Greene.
Wet bank.

No. 18,588. *Nemophila*
Cor. white. Moist bank.

- The above numbers, 18,585-18,588, were collected in a gully on a northeast slope by a rivulet. The associated woody growth is: (see p. 205).

Quercus wislizenii. *Aspen microphylla*
Quercus chrysolepis. *Pinus ponderosa*
Asculus californicus *Quercus Kelloggii*
Umbellularia californica
Pinus sabiniana

No. 18,589. *Sanicula tuberosa*
Moist openly wooded ne. hill slope.
With no. 18,588.

- I drive on up to top of the hill and soon come to the old village of Pilot Hill.* The fine old-time stage station hotel is gone.* I drive south one and 1/4 miles, turn in on the Rattlesnake Bridge side ^{50 yards} road and make a lunch. 400 yards back on the main road I passed a mansion of gold days, on west side of the road. It faces east, is three stories high, a very large residence with white pillars in front and an entrance doorway worthy of its size and pretensions. It would seem now as if in the hands of aliens. It must have a history.

* Not Pilot Hill, which is further s.
See p. 208.

- from my lunch place (cf. p. 207) I drive south $\frac{1}{2}$ mi. to Pilot Hill, where is still standing the fine old hotel building of horse stage days. Here I turn east towards Placerville and in about a half mile collect:

"No. 18,590. *Dodecatheon Hendersonii*.
Gray. ^{near Pilot Hill.} Open woods, nr. slope.

In about a mile farther, I collect:

"No. 18,591. *Nemophila menziesii*
Hastings Creek.

I drive to Coloma, pass the Marshall Monument, South Fork American River and climb the hill, then into Placerville. I go up to the Forest Institute, where a warm welcome is given ^{nr.} _{cont.} p. 231.

I drive down to Lotus with Superintendent Wiedeman of the Forest Genetics Institute, Mr. Lloyd Austin, of the Institute, and Mr. Cummings. cf. field list on p. 239.

We proceed to the Baesi station beyond Lotus, where experimental plantings are projected.

I collect as follows:

"No. 18,592. *Alchemilla* ^{*occidentalis* Nutt.} ~~*arvensis*~~

Herbage greenish. On clay flat.

"No. 18,593. *Alchemilla* ^{*occidentalis* Nutt.} ~~*arvensis*~~

On fine-gravel-sand-loam bd, growing very densely. Herbage slightly reddish. These two *alchemillas*, this one and the preceding number, look very different in the field.

"No. 18,594. *Lomatium stricatum*
C. & H. Openly wooded flat.

"No. 18,595. *Plagiobothrys tenellus*
Gray. Grassy flat.

no. 18,596. *Minulus (Eumulus)*
douglasii Gray.

Corolla crimson; throat very open, almost circular, purple with a flare of yellow lines as seen inside. Upper lip of 2 large lobes bent back a little (not recurved), not curved forward as in no. 18,584; limb of lower lip almost obsolete, the 3 lobes very short and rudimentary. Two marked yellow dots in throat on edge of middle lobe of lower lip, on a purple ground.

Antthers connivent in pairs as in no. 18,584, the stigmas hidden behind the upper pair, ^{↑ mostly} not exposed over it as in no. 18,584. Stigmas ^{lobes} very unequal, the anterior the larger, broadly lanceolate, its slender tip often lying between the lobes of the -

upper pair of anthers; posterior lobe microscopically minute, that is much reduced, triangular-acuminate. Style hairy. Upper side of leaves glossy, microscopically hirsutulose; lower side glabrous, simulating glaucousness. Flowers very primly erect. Steep bank in loose granite sand.
↑ coarse

no. 18,597. *Pityrogramma triangularis* (Kauff.)
Maxon var. *triangularis*
Fern on wooded bank.

no. 18,598. *Galium*

Cor. dull white, its 4 lobes rotate, but curved backward a little; style 2-cleft. Stamens spreading, very small.

no. 18,599. *Luzula* °

Open woods.

no. 18,600. *Stellaria nitens* Nutt.

Banks in open woods.

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Lotus, Eldorado Co., Apr. 6, 1938.

no. 18,601. *Sagina*.
Moist meadow flat.no. 18,602. *Calandrinia* ^{ciliata} ~~comb~~
~~escens~~ var. *menziesii* (Hook.) Macbr.This has here the habit
of an introduced plant just as
in the Coast Ranges; that is,
it is in a cultivated meadow.no. 18,603. *Nemophila maculata*
Rth. Making a great show
in an open meadow.no. 18,604. *Poa bulbosa* L.
(det. B. Crampton 7/77)
This grass has basal
swellings, a little tuber-like.- A hillside in Spanish Ravine was
cleared of *Arctostaphylos viscida*
say three years ago. The stand
of seedlings $\frac{1}{2}$ to $1\frac{1}{4}$ foot high
is now very dense! cf. no.
no root-crown sprouting! 18,607.Spanish Ravine, Eldorado Co.,
near Placerville, April 7, 1938.

213

no. 18,605. *Mimulus Douglasii* (Benth.)
det. RCB. gray.
Summit grassy ridge athead of Spanish Ravine. See p. 223.
no. 18,606. *Plagiobothrys notha*
fulvus Gray. With 18,605.no. 18,607. *Arctostaphylos*
viscida Parry. Bark dark
chocolate, often quite dark.no. 18,608. *Ceanothus integer-*
rimus H. & A. New leaves
coming on bushes. Old leaves
hanging straight down
and thus conspicuous; they
are large and very leathery!
These old leaves represent only
those which have gone through
the winter! I note one bush
which has only old leaves
hanging all over it - but

not thickly — say about $\frac{1}{5}$ of last season's foliage! the young leaves just beginning to burst but scarcely visible yet. Bark smooth, yellowish-green. On one very old shrub I note thickened bark at base, dark brown, checked by fissures into small checks.

No. 18,609. *Arctostaphylos* ~~near-~~
enda Jepson sp. n. See p. 223 seq.

Shrub no. 1. 6 ft. h.; stems 6 from base, erect from a shortly decumbent base. Leaves dense on the ultimate branchlets, compacted, noticeably vertical. Corolla white, pink on lower part, or becoming pink. Flowers 5 to 8 in very close clusters. Bark dull brown, finely fissured longitudinally,

and thus rough from the main stems at ground quite out to the ultimate branchlets — only the season's shoot being smooth. This shrub is on gravelly soil as an associate of *Arctostaphylos viscida*. all the associates are quite erect.

Shrub no. 2. On outcropping sandstone rock. Stems 10, trailing or spreading horizontally and widely, the main stems remarkably curved and contorted even for a many-stemmed shrub 4 ft. h., 11 ft. 8 in. spread. Trunk 11 in. diam. at ground, but immediately parting into 10 main stems. ^(within 3 inches) Stems 2 to 5 inches in diam.

Shrub no. 3. 7 ft. h., 3 stems. Associates in general: *Arctostaphylos viscida*; *Pinus ponderosa*; *Pinus sabiniana*; *Ceanothus cuneatus*; *Quercus wislizenii*. Does not crown-sprout. Berry (young) smooth, glabrous.

- ✓ No. 18,610. *Draba verna* L.
on flat near entrance to
Spanish Ravine, Apr. 7, 1938.

— *Prins ponderosa* vs. *P. jeffreyi*.
Lloyd Austin admits the two over-
lap in some size so as to be
indistinguishable; in catkin size;
in seed size. Minor says
he makes nursery cuttings of
P. ponderosa rather readily, of
P. jeffreyi with great difficulty.

April 8, 1938

Drove today from Placerville
towards the South Fork American
River on the Georgetown road.
Stopped ^{in Big Cañon} near an old cabin and
butorized on a slope not far
above the river bridge. Collected
nos. 18,611 to 18,617.

Itinerary continued p. 220.

^{in Big Cañon}
Hillsides near old cabin above (2. of)
Chili Bar, South Fork American
River, April 8, 1938, Colorado Co.

- ✓ No. 18,611. *Gollinsia*

Earliest leaves pinnately
divided or lobed, the cotyledons
orbicular. Juvenile leaves abruptly
succeeded by large oblong serrate
leaves. Moist bank.

- ✓ No. 18,612. *Stellaria nitens* Nutt.

Corolla irregular, unilaterally
developed, the 5 petals unequal.
Petals deeply 2-parted, the lobes
unequal. Petals $\frac{1}{4}$ as long as
sepals. Sepals lanceolate-acum-
inate, narrowly scarious-mar-
gined. Stamens 3, short.
Moist bank.

- ✓ No. 18,613. *Ranunculus occidentalis*
Nutt. var.

Grassy hills.

- ✓ No. 18,614. *Nemophila*
Cor. white, bowl-shaped; scales
so paired by their edges as to make
with 5 ridges radiating from
base of style. These ridges lie
↑ apex, that is, the middle of the cor-
lobes, and thus alternate with
the stamens, are the sinuses.
which ↑ opposite

- ✓ No. 18,615. *Physanocarpus curvipes*
Hook. Grassy hillside

- ✓ No. 18,616.

This umbellifer grew on the
grass hillside with 18,615.

- ✓ No. 18,617. *Vicia*
Corolla crimson!! (Turns
dark blue or dark purple in
drying!!)

** Eldorado Co.

* Big Cañon south of Chili Bar.

- ✓ No. 18,618. *Galium*
with next open steep hillside.
- ✓ No. 18,619. *Eschscholtzia hypericoides*
Open steep hillside, north
side of South Fork American River
above Chili Bar.

- ✓ No. 18,620. *Polytrichum*
Moss on moist bank. Kelsey,
south of (Eldorado Co.).

- ✓ No. 18,621.

Moss with 18,620.

- ✓ No. 18,622. *Quercus Kelloggii* Newb.
Kelsey, south of (Eldorado Co.)

- ✓ No. 18,623. *Nemophila maculata*
Bth. Louisville. Open field.
(Eldorado Co.)

- ✓ No. 18,623a. *Arctostaphylos*
viscida Parry. Kelsey, south of.
Cor. pink. (Eldorado Co.) ↑ 1 1/4 mi.

* Eldorado Co. In Big Cañon.

Drove on down to the South Fork American River bridge from the collecting station mentioned on p. 216. The bridge is near Chili Bar. Drove up hill; in about one mile collected 18,618-18,619.

Drove on up to top of hill; near top collected nos. 18,620, 18,621, 18,622, 18,624. Drove on to Kelsey where is a James A. Marshall Museum. Small village of one dozen scattered cottages. On to Louisville; an old-time store and a dwelling. The road forks here; the right hand fork goes to Spanish Flat. I follow left. Soon another fork to Garden Grove, with a school 200 yds. beyond fork. I follow left towards American Flat. In about a mile I stop and explore a hillside on left

of road for *Arctostaphylos missouriensis*. Find only *Arctostaphylos viscida*, almost pure formation 7 to 10 feet high. One individual is, in a way, arborescent, 14 feet high with a trunk nearly 1 foot high before branching and 10 1/2 inches in diameter.

Next I followed a fire lane cut through the chaparral to the summit of the hill on the east side of the road. This is a pure or almost pure formation of *Arctostaphylos viscida*. The stems stand, on the average, about as thick as stalks in a corn field or thicker. The growth is very dense, 8 to 12 feet high, at the top of the hill 14 feet high. This formation makes a nurse cover for *Pinus ponderosa*, a little of which has topped the

the chaparral considerably. The ground beneath the manzanitas is thickly covered with manzanita leaves and is almost destitute of herbaceous vegetation.

I drive on from the observation station near Louisville (cf. p. 220) to American Flat (a ranch house) and leave the Georgetown Road and turn right to Spanish Flat. This is an old time village of six or seven buildings, several of them dwellings. I keep on, over a very rough road, to Louisville. Thence back to ^{and return} Placerville to the Forest Institute.

- For list of men at the Forest Genetics Institute, cf. vol. 58, p. 500.

see p. 213 ante.

[Spanish Ravine.] Heavily hydraulized, the head incised by cliffs 20 to 90 feet high. I climb out of it at the left side, go on up to summit of ridge (*Libocedrus decurrens*, *Pseudotsuga taxifolia*, *Arctostaphylos californica*, *Pinus ponderosa*) and follow the ridge around the head of the cañon, come back into the great $\frac{1}{2}$ mile wide hollow from the west side, work over the very rough terrain to the east side, pick up my trail (by which I came up); follow trail back; in a formation of *Arctostaphylos viscosa* on natural terrain, I spot a few shrubs of *Arctostaphylos viscosa*. See p. 214 ante. See p. 224.

Spanish Ravine.

Eriodictyon californicum.*Rhamnus tomentella*.*Ceanothus cuneatus*.*Pinus ponderosa*.*Pinus sabiniana*, in association often with *P. ponderosa*.

[Cont. from p. 202. Vacaville. On the W. slope, Burton Hill is *Leptodermis californica*, *Tonatiuum intricatum*, *Ceanothus Kelloggii*.

Returning from the top of Burton Hill I noticed a dense shrub colony in a moist hollow SE.

from the ranch buildings on valley floor at foot of hill. This I took to be *Rhus diversiloba*, but there was no time to go over to it. It is my remembrance that *Rhus diversiloba* occurs sparingly or not at all south in the Annapolis Hills. Too dry.

Goldado Co.
No. 18,624. *Scleranthus annuus* L.

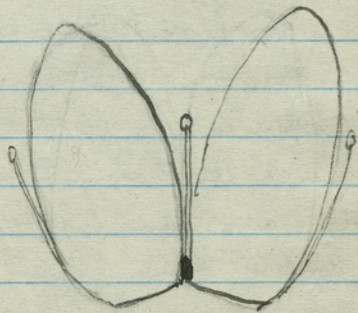
First a short primary central erect axis, with several larger stems radiating prostrately from beneath it. Leaves opposite, connate at base by a broad membrane. Flo. solitary in the upper axils; calyx with 5 lobes, or perhaps properly 5 sepals set on a cup-like hypanthium. On the margin of the hypanthium 8 stamens (5 sterile and 3 fertile, the fertile with quite large anthers. (Apparently, in one case 4 fertile, 5 sterile). Calyx-lobes scarious-margined. — The Manual statement is "stamens 10 or 5." The flowers are sessile or subsessile in the forks and terminal on the branchlets, the forks being much condensed at the ends of the stems.

No. 18,625. *Scleranthus annuus* L.

Strictly erect!! Growing in grass or associated with other vegetation, in dense stands. Stamens about 5, these plants at least not more; 2 of them fertile!! I note no other differences between this erect form and the prostrate form no. 18,624, save that the erect form is light green and the prostrate form is dark green.

No. 18,626. *Montia fontana* L.

Corolla of 2 petals; stamens 3.



on a spot where water has stood. This must be, I suppose,

April 9, 1938.

Montia fontana, though comparison should be made with authentic material on returning to the laboratory from the field. The stamens are 3. The habit of the plant is that of *M. fontana*. The leaves are better described as linear-oblancoate. The main query centers in the corolla. The corolla consists of 2 petals; there are almost distinct but united slightly at base on one side, the stamens alternating with the petals as shown in my sketch. My interpretation is this: Corolla in this species is very unequal-sided. It would seem in this case the reduced side had disappeared altogether, leaving 2 petals and 3 stamens.

The inflorescence needs special description. I note: 1. Umbrella of 5 pedicel flowers sessile

in the axils. 2. Umbellet of 3 pedicels, 2 pedicels one-flowered, 1 pedicel with 3 flowers (pedicels) at its middle and a terminal flower.

3. Umbellet with 3 pedicels, one of them again with 3 pedicels.

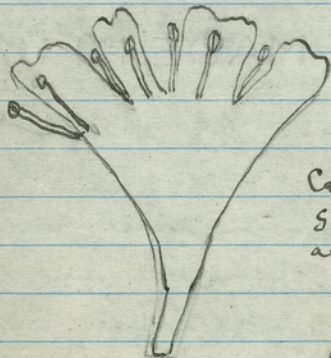
4. Umbellet of 2 pedicels, one short and one-flowered, the other racemously 4-flowered.

5. Umbellet with 3 pedicels, one of them longer with 5 pedicels subumbellate at summit.

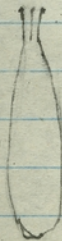
Therefore, this plant is ^{not} well-covered by the phrase, "racemes loose, 3 to 9-flowered," although there is a marked tendency towards racemose condition.

No. 18,627. *Chorizanthe*

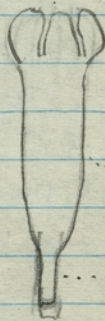
Involucere 3-angled, strongly, 5-toothed, 3 of the teeth prominent, 2 minute or small, all cuspidate-hooked.



Calyx spread open.
Stamens inserted
at mouth of throat



ovary



...lobes.

(Calyx)

...throat.

..... tube.

Calyx: 4-lobed shortly,
Stamens ?!



Involucres 3-lobed ^{and 3-angled,} with transverse corrugations

between the lobes.

Invol. - tube crimson, the lobes green.

Teeth in the sinuses small or obsolete.

Basal leaves oblanceolate, narrowed a little below, then widened into a dilated petiolar base. Of the truly basal leaves the narrowed portion may be larger than the terminal broader portion.

My plants are tiny dwarfs just beginning their growth, I suspect, just beginning to flower. Assuming this to be *Chorizanthe polygonioides* I do not appreciate the phrase:

"bracts in pairs, x x x, becoming smaller towards the ends of the

branches" (p. 299, Man.). Why should not they be considered cauline leaves? In Key they appear to be called "cauline". cf. p. 295, sub. no. 19.

Note that the calyx is merely 4-lobed, not 6-lobed, and especially not 6-parted.

Generic diag. - species mostly of the arid foothills or deserts.

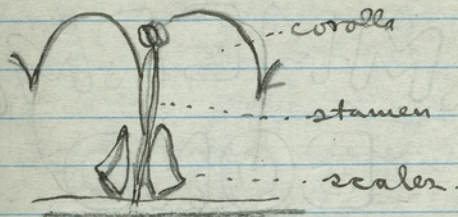
- Cont. from bottom p. 208. I first met Lloyd Austin, then Supt. Weideman, then various other men. (cf. list, p. 500, vol. 58.). I was given a bedroom in one of the cottages which was very comfortable. I took my meals at Placerville. On Saturday evening, Apr. 9, I was the guest of the Austins at dinner. For view, see note on p. 269, vol. 58. One can in fine weather also see the Coast Range (Arapiques Hills; Twin Sisters Peak; Mt. Horvath; and the high snow peaks n. of Clear Lake). Also Mt. Diablo.

No. 18,628. *Arenaria howellii* Wats.

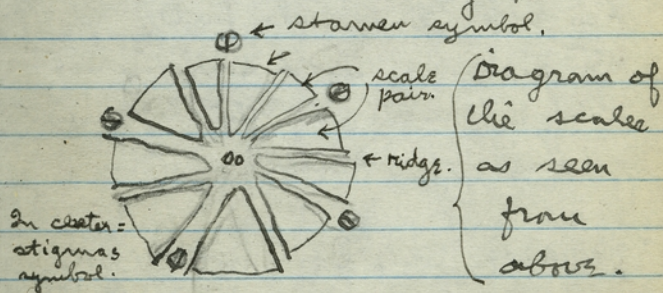
Stamens 10, 5 longer, but all very short. Styles 5, very short. Petals five! Sepals 5, distinct, lanceolate, scarious-margined. Ovary superior. Petals orbicular, small and scale-like, shorter than the stamens and hidden beneath them! alternate with the sepals, membranous. Leaves lanceolate, narrowly connate-perfoliate; stipules $\therefore$ none. Herbage glabrous!! Diffusely dichotomous, the stems very slender, — filiform! Gravely flat in red soil.

— *Remaphila* (no. 18,614), cont.
Cor. white; stamens with a pair of triangular scales at base. Anthers black.

April 9, 1938.



The scales stand vertically and at right angles to the cor-tube (not well-shown above which shows only roughly their shape). The pair of scales are essentially parallel.



The pair of scales at the base of each stamen are turned inward in such a way that

their edges meet; and ^{which} tips rest on the upper part of the ovary. Each scale of the pair meets and is parallel by the edge to the scales of the adjacent pairs. So it is that the inflected scales exactly cover the ovary all around save its upper part.

This peculiarity of the scales accounts for the observation for this material recorded in the field on p. 213 ante.

This observation was faulty, but ^{in a sense} the ridges observed were actual ridges made by the contiguous pairs of scales.

✓ No. 18,629. *Sedella pumilla* (A. N. S.)
Gravelly flat. Britt. + Rose

✓ No. 18,630. *Baeria*
Gravelly flat.

Drove to Diamond Springs and turned off onto the road to Grizzly flat and Antenn. After about 2 miles I stop and collect:

✓ No. 18,631. *Plantago*

Open hills, sterile clays.

✓ No. 18,632. *Sagina apetalata* Ard.

This is mostly on tiny bare spots of a few inches or a few feet in the midst of vegetation areas.

It is so inconspicuous so easily to escape notice, but I suspect it is far from being uncommon as formerly supposed, either in individuals or breadth of distribution. The bare spots (see above) are often low spots.

✓ No. 18,633. *Othocarpus pusillus* Nutt. Note the very large pods, large relatively to the flowers say. I do not know that the fully mature pods have been observed.

sterile hills, forming little colonies. The basal leaves, — upper portion with remote pinnatifid divisions, the divisions linear or subfiliform, the lower portion broad and entire, properly construed as petiole, I suppose, though so broad.

— *Heteromeles arbutifolia*

This is common in the chaparral at this spot (see top p. 235).

— *Eriodictyon californicum*.

In the chaparral.

"No. 18, 634. *Ericameria arborescens*, Greene. In the chaparral on dry gravelly hilltops.

— I drive on easterly, pass the Ringold School set back off the road in the brush; and a roadside store (Sierra Trading Post); and climb a hill to the flat plateau top. I stop where a

country road turns off on the right hand side (southerly), where are about 15 mail boxes — nearly all with British names. ^{Oak Hill alone, c. p. 245.} This is the mail delivery spot for the neighborhood back on this ^{side} road (Oak Hill School district). ^(school is back on road) Within about 200 yards of the mail boxes, ^{noted above, but} on this ^{side} road stands a splendid ^{symmetrical} *Quercus chrysolepis* tree. The ^{side} road has here, in front of a cottage, been widened in deference to the tree. I make measurements as follows:

Circumference of trunk at 4 ft. =
16 feet, 9 inches.

At 7½ feet the trunk parts into two great arms which support a very tall and broad crown. I measure the diameter of the crown on the ground as 92 feet. The height I estimate as 70 feet. The tree seems very sound, the

trunk in good condition, and the crown vigorous. It is, however, very full of mistletoe. (see p. 246).

One mile southerly on this road is the L. L. Mullison ranch as evidenced by a road sign.

The road sign at this point says Plymouth 33 miles, Auburn 16

miles. There is also a dwelling on the side of the road opposite the tree.

— All through this ^{lower Yellow Pine} region, as everywhere else in the foothills at this altitude, *Arctostaphylos uva-ursi* is the dominant shrub and often forms extensive pure formations, or with some admixture of *Ceanothus cuneatus*. This white-leaf *Mauzanita* association forms a mass cover for *Pinus ponderosa*, *Quercus kelloggii* and *Quercus wislizenii*.

✓ No. 18,635. *Orthocarpus erianthus* Bth.

✓ No. 18,636. *Taraxacum officinale*

✓ No. 18,637. *Scribneria bolanderi* (Thurb.) Hack.
(det. B. Drayton, 7/37)

This grass on a gravelly flat.

✓ No. 18,638. *Plagiobothrys tenellus* Gray.

Plants noted at Bassi station near Solus,
Eldorado Co.

Cf. p. 209.

- | | |
|------------------------------------|---|
| - <i>Ranunculus occidentalis</i> . | <i>Dodecatheon hendersonii</i> . |
| - <i>Quercus wislizenii</i> . | <i>Chlorogalum pomeridianum</i> . |
| - <i>Pinus sabiniana</i> . | <i>Sanicula tuberosa</i> . |
| - " <i>ponderosa</i> . | <i>Symphoricarpos racemosa</i> . |
| - <i>Cerastium vulgatum</i> . | <i>Thymus confusus</i> var. <i>confusus</i> . |
| - <i>Plantago lanceolata</i> . | ✓ <i>Verbascum thapsus</i> L. |
| - <i>Medicago denticulata</i> . | ✓ " <i>blattaria</i> W. |
| - <i>Rhamnus tomentella</i> . | <i>Stellaria nitens</i> . |
| - <i>Calandrinia canaliculata</i> | <i>Saxifraga californica</i> . |
| var. <i>menziesii</i> . | <i>Mecynella linearis</i> . |
| - <i>Ambrosia psilostachya</i> . | <i>Nemophila menziesii</i> . |
| - <i>Salix lasiolepis</i> . | |
| - <i>Ceanothus cuneatus</i> . | |
| - <i>Erodium botrys</i> . | |
| - <i>Ischschultzia calif.</i> . | |
| - <i>Achillea anserina</i> . | |
| - <i>Lomatium striolatum</i> . | |
| - <i>Plagiobothrys tenellus</i> . | |
| - <i>Wyethia</i> sp. (white). | |
| - <i>Erodium cicutarium</i> . | |

- Drove to Diamond Spgs. from the Forest Institute with Fred Shoemaker. Turned left on Pleasant Valley road. On down grade turned up a little hill and drove through some swales to a little flat once occupied, by an irrigation ditch. Crossed ditch, through a swale, followed railroad track, then a wood road southward to a dilapidated but used cow-shed, thence to right up a low very bushy ridge. This low ridge has a great variety of shrubs on it, and some trees, but has been fire-burned, the last time about three years ago. On a gentle slope *Encameria arborescens* was dominant over about four acres - a fine uniform thrifty stand of it. I observe, as follows:

↑ further

- *Arctostaphylos viscida* Parry. In most places this → is the prevailing shrub and forms a closed pure cover. A shrub with very large leaves is:

No. 18,639. *Arctostaphylos viscida* Parry.

No. 18,640. *Quercus moreletii* Kell.

Crown-sprouts, forming a bushy stand on the crest of the little ridge.

No. 18,641. *Arctostaphylos nisseniana* C. H. Merriam. Shrubs 3 to 6 ft. h.

like *A. viscida* in appearance and easily passed by as that species in the brush, having the same habit and time. The trunks and main stems are, however, rough barked, the bark fissured into narrow longitudinal strips which give an extremely shaggy or loose appearance to certain stems or main trunks.

In every case, however, the main stems and branches are rough-barked and brown. The bark of the shoot of the season is smooth; the second year branchlet is essentially smooth, though beginning to exfoliate; the third year is similarly smooth. On exfoliation the branches are smooth barked, back to the fifth or sixth year, until growth produces another exfoliation!

The state of things just described is not true of *Arctostaphylos* *monarda* (p. 214) collected in Spanish Ravine. There, in the shrubs of that locality, the bark is permanently roughened right up to the shoot of the season which is the only smooth-barked portion.

In *A. visseriana* the branches and branchlets are erect, stoutish,

Apr. 12, 1938.

and tend to be fastigate a bit. The leaves are discrete and occur along the branches back for four years growth. That is leaves four-years old are in evidence and leaves 3-years old are common.

In *A. monarda* (p. 214) of Spanish Ravine, the leaves are mainly of the shoot of the season, a few on second year wood. The branches and especially the branchlets are very slender and spreading or divaricate. The foliage thus appears on the periphery of the shrub, whereas in *A. visseriana* the branches are leafy some distance back.

The leaves in *A. visseriana* are white but smaller than in *A. viscida*; they are thickish and slightly fleshy. They are prevalently oblong and obtuse at apex, and truncatish or sub-

cordate at base. Sometimes they are ovate and acute. But almost always they are smaller than in *A. viscida*. They are glaucous and subglabrous or slightly or obscurely pubescent, the petioles pubescent. The racemes or panicles are curved downward markedly. The bracts are foliaceous. Corollas white, turning pink, urn-shaped.

Leaves larger than in *A. monenda* (p. 214) of Spanish Ravine, those of Spanish Ravine being light green but not at all white.

Leaves in *A. misseniana* often markedly unequal; in *A. monenda* (p. 214) extremely uniform in size.

Apr. 12, 1938; 1800 ft.

no. 18,642. *Arctostaphylos viscida* Parry.

no. 18,643. *Arctostaphylos viscida* Parry X *misseniana*. This has the aspect of *A. viscida* but has very rough-shaggy bark on main trunk. The suggestion comes to my mind that it may be a hybrid. It is very floriferous. (with *A. misseniana*)

— On this walk from where we left the machine to the little ridge and back there are ^{at} number of pleasant tiny vales or flats with interesting trees. There is a great charm about these quiet spots with the green sward running down to little meadows in ravines where will be fine flowering in a month or two.

— We drive on easterly to the Oak Hill Lane (cf. p. 237), where Fred. Shoemaker takes a photo.

1300 ft.

graph of the great oak. In the field to the left I note a dense seedling stand of *Quercus Kelloggii*. It makes a circle about 90 ft across, sharply defined rather, the seedlings 2 to 8 feet high and set about 2 to the square foot on the average or may be 3. I note near the center of the circle the stump of an old tree. The tree may have been cut in a good seed year or it may have died or fallen after a good acorn year.

"No. 18,644. *Quercus chrysolepis* Liebm. This is the tree described on p. 239 ante. The trunk at ground is well buttressed and is 9 ft. in diameter at the ground.

— We drive only easterly and come to a well-defined valley about one mile long, lying about 1 mile north

of Pleasant Valley town. It has over it a considerable number of very erect and tall-trunked oaks. The trunks are so white as to suggest *Quercus douglasii*, but the architecture and the valley flat situation demand *Quercus lobata*. They prove to be *Quercus lobata* when we go in to see them.

No. 1. 15 ft. 6 in. circ. at 4 ft. The height, says Shoemaker, is 120. I make it 105.

No. 2. 17 ft. 6 in. at 4 ft., the crown broken off.
↑ main
Nemophila maculata is here.
— We drive on ^{towards Pleasant Valley town} a short distance and turn left. In about a 1/2 mile we stop to look at a hillside near the road which has been cleared of chaparral (*Adenostoma fasciculatum*, *Camathus cuneatus*, *Pterostaphylos racida*, *Photinia arbutifolia*, *Eriodictyon californicum*, *Quercus*

wislizenii scrub). An area of about five acres is now dominated by *Salvia sonomensis* (No. 18,645) which forms a rough very leafy mat over it. The stems are prostrate and bear short densely leafy branchlets, so that the cover is very leafy. When one lifts one of these main stems it is seen that the embryonic panicles are now in evidence and are curved backward pendulous - i.e. on curved peduncles. They were, formed, doubtless about the end of March, and will remain concealed beneath the foliage tufts until they get ready to raise erectly for flowering.

It is important and interesting to note the manner in which *Salvia sonomensis* has responded to this act of clearing! In the primitive chaparral on the hill-

slope above the cleared strip, *Salvia sonomensis* occurs but occurs sparingly with the individuals far less developed than in the clearing. I note ^{as scattered plants} them mainly in the chamise, but also scattered through the chaparral generally which is composed of the species noted at bottom p. 247. No. 18,645. *Salvia sonomensis* Greene. ^{see p. 248.}

- We drive on northward, leave Newton to the left, and ascend, ascend, ascend - and strike the Placerville - Tahoe Highway at Camino, cross ^{it} and go down North Cañon. This is a deep cool moist cañon heavily forested:

- *Pseudotsuga taxifolia*

- *Pinus ponderosa*

- *Abies concolor*

✓ No. 18,646. *Bornia nuttallii* Aud.

✓ No. 18,647. *Lithocarpus densiflora* ^{Rehd.}

- *Acer macrophyllum* Pursh.

✓ No. 18,648. *Torreyia californica*
About 15 ft. h.

✓ No. 18,649. *Toxus brevifolia* Nutt.

A fair number of individuals scattered along the stream.

- *Arbutus menziesii* Pursh.

We drive ^{on} and pulling out of the cañon ^{at its lower end} we spot on the bank:

✓ No. 18,650. *Osmorhiza cerasiiformis*
Greens. ♀

✓ No. 18,651. Same. ♂

✓ No. 18,652. *Calochortus monophyllus* (Lindl.) Lem.

With no. 18,640

Brushy hillslope.

- *Gollinsia bicolor* Bth.

Upper lip cleft slightly more than half way to transverse crest, the two lobes erect, parallel, quadrate, pale lavender. Lateral lobes lower lip closely parallel, plane. Ventriflexed dilation on upper side cov.-tube rounded, very marked.

high-
Balyx lobes acute, longer than cov.-tube, longer than the apparent opening of throat. Upper pair of stamens with a fringe of hairs on upper (anterior) side, the lower pair nearly glabrous or with a few hairs below. - W.L.J.



Rough diagram to show nature of saccate portion of tube.

Coll. in Marsh Creek

Leaves. Fred Shoemaker, Apr. 11, 1938.

Collinsia bartsiaefolia Bth.

Cor. white, larger than in the preceding. Lateral lobes of lower lip. lavender-veined below, somewhat troughed above. Upper lobes cleft $\frac{2}{3}$ way to crest above throat. Tube of cor. not so ^{transverse} saccate on upper side — the upper and lower sides nearly parallel. Lobes of upper, turned a little back of a right angle ^{lip} (in *C. bicolor*, prev. page, they are at right angles to tube!). Calyx-lobes shorter than tube, obtus. Stamens: upper pair with a line of hairs on upper side; lower pair hairy on upper side only at base. Collected 3 mi. W.

of Byron, by Fred Shoemaker, Apr.

11, 1938. This may possibly be

Greene's *C. stricta*, but if so it

Apr. 13, 1938.

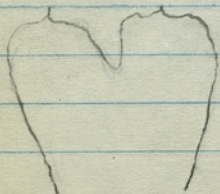
is not to be regarded as a variety of *C. tinctoria* Hartw. — W. L. J.

— *Collinsia* No. 18,665. See vol. 58, p. 264.

Corolla colors as in no. 18,656.

Keel slightly hairy at tip

Gland on upper side a papillate process, ~~the~~ so. Anterior pair stamens glab. or nearly, the posterior a little hairy.

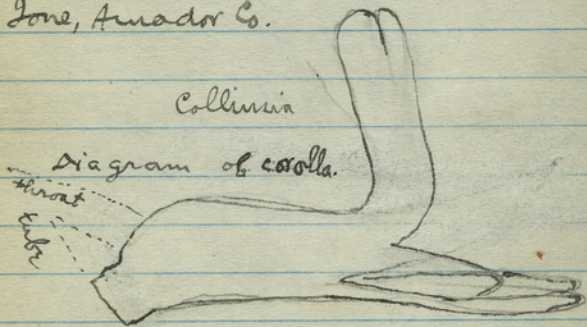


Upper lip showing degree of cleft and shape.

Jones, Amador Co.

Collinsia

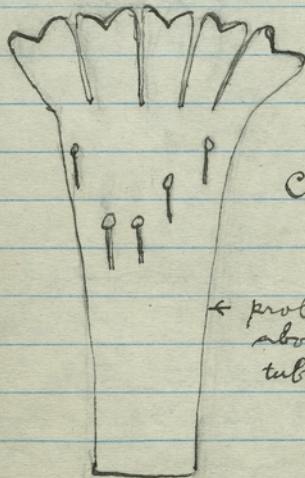
Diagram of corolla.



Upper and lower lip almost parallel, the lower lip continuous in line with tube, the upper lip curved back a little, perhaps more than in above diagram.

— *Collinsia gracilis* Dougl. No. 18,655. See vol. 58, p. 262.
Seeds 3, one in each cell. Style incl. ad, glabrous. Stamens included. Cor. lobes shortish. Calyx-lobes linear or alternate upward a little, equalling or slightly exceeding cor.-tube; calyx cleft half way to base. Cor.-tube brown. Cor. pink, its lobes markedly and angularly notched. Stamens 2 high, 2 low and 1 in the middle.

Nashville,
El Dorado Co.



Cor. spread open.

← probably, throat above this point, tube below.

Addresses:

- A. L. Scarlett, farmer, Suisun Valley
(one of my former students).
- Marvins Beers, nurse, Sanitarium.
- Milton Miller, nurse, Sanitarium.
- Barr, Scotchman, Sacramento.
- Dr. C. H. Talnadge, M. D., Sanitarium.
- Dr. C. A. Gregory, M. D., "
- Elder A. J. Wearner, "

- Cont. from p. 201 ante.

There was also high wind on Dec. 18, 19, 20 (1937), Saturday, Sunday and Monday am. Whole trees came down on University campus (tall Eucalypti) near College av. A California Laurel tree near the La Conte Oak.

Addresses:

- Dr. Leland, Klamath (Indian Reservation doctor - met at Knapp Hospital). - (Seventh-day Adventist).
- Dr. Stumpf. Knapp Hospital (Seventh Day Adventist).
- Miss Marie Grahame, ^{nurse.} Knapp Hospital. Seventh Day Adventist.
- Miss Nielsen. Nurse (Swede). Knapp Hospital.
- Miss Griffin, Nurse. Knapp Hospital.
- Mrs. Ireland. Night Nurse. Knapp Hospital. A true lady.
- Dr. Paul and Helen Lum; their child Taffy. Crescent City. (His cousin Robin)
- Mrs. Dyer, head nurse, Knapp Hospital.
- Mr. & Mrs. A. F. Van Darenter, Box 73, Fort Dick, Del Norte Co.
- Red River Cart. Description of way in which made (wholly without iron), by Angus McKay, in July 1937 issue of Kiwanis Magazine.

- *Quercus chrysolepis*. Buchanan road, 8 mi. from Tulelake & 3 from Kinnade Ranger sta. (Stanislaus Forest Map.).
- *Arctostaphylos viscida*. Large individual. Just e. of Pinelhurst Ranger sta., ss. Fresno Co. (R. G. Brown).

- Delhi primitive field, 158-9.

Primitive field 158-159.
at Delhi